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ABSTRACT

The question of how to best prepare nurses for practice continues to be debated extensively. The crux of the debate is whether a bachelor of science in nursing (BSN) should be required of all registered nurses in the United States or whether an associate degree in nursing (ADN) and diploma programs adequately prepare novice nurses for practice. Most of the literature on the relative effectiveness of BSN and ADN programs is inconclusive or dated. Most relevant studies focus on one type of program and do not directly compare how BSN and ADN graduates perform on the job. The findings of the few studies that do compare outcomes of BSN and ADN programs are mixed. What the literature does suggest is that the differences between ADN and BSN programs may not greatly affect nurses' ability to perform basic nursing tasks and that both programs prepare registered nurses for entry-level positions in most health care settings. The following lessons for those involved in planning and delivering nursing education were identified from the literature: (1) move carefully and work together; (2) conduct further research and use it; (3) create clearer career ladders; (4) differentiate between novice and advanced practice; and (5) ease movement between the ADN and BSN. (Contains 60 references.) (MN)

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The Debate over Nurse Preparation

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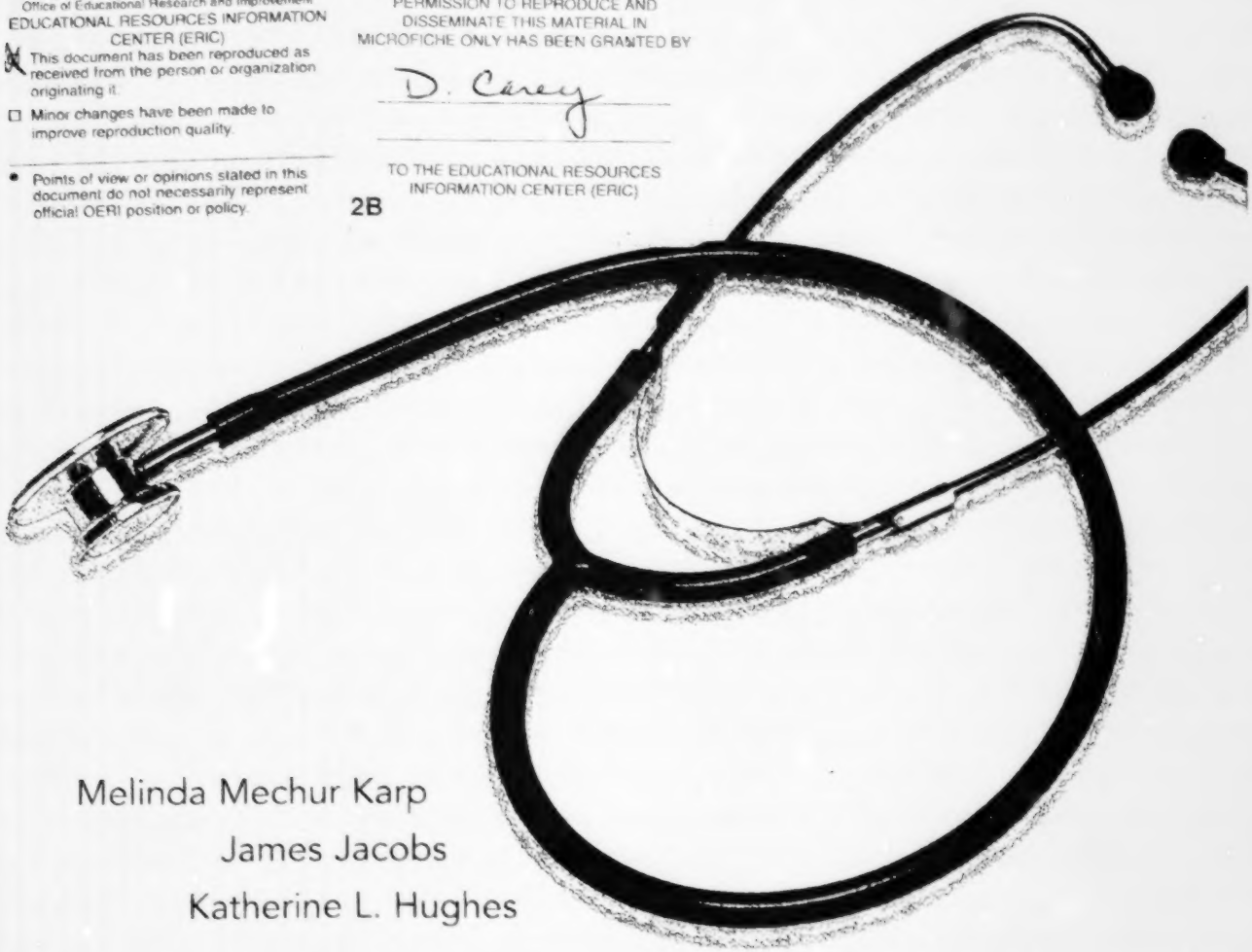

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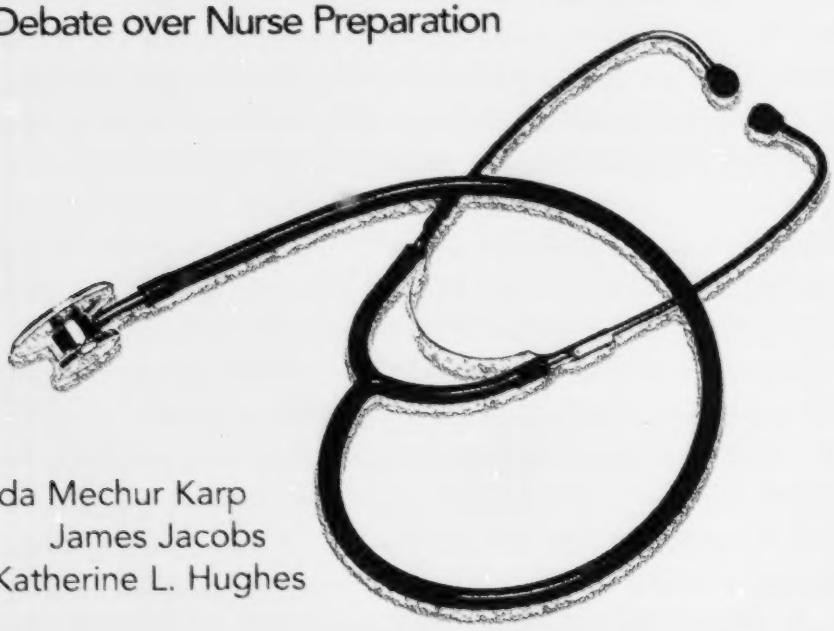

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Executive Summary

This monograph explores the current debate about the best way to prepare nurses for practice and discusses existing research on the topic. We draw on published literature and on our own interviews with nurse educators at a variety of educational institutions. We believe that the existing literature and ongoing research can help policymakers and practitioners create a nurse education system that will best meet the country's healthcare needs. Because of the lack of published information on the subject, however, we hesitate to draw definitive conclusions about appropriate educational standards for nurses, but we do offer limited policy recommendations and suggest directions for further research.

The crux of this debate is the question of whether a baccalaureate degree should be required of all registered nurses in the United States or whether associate degree and diploma programs adequately prepare novice nurses for practice. Chapter 1 offers a short overview of the issue and sets it in context with regard to the national movement to establish skill standards and the growth of credential requirements for entry into occupations and professions. Chapter 2 gives an overview of the history of nurse education in the United States and further explains the debate about educational requirements for registered nurses. Chapter 3 focuses on the demographics of nursing and how nursing education can affect workforce diversity.

Chapter 4 looks at the differences between the associate degree in nursing (ADN) and baccalaureate in nursing (BSN) programs. Chapter 5 explores novice nurses' daily job tasks. Chapter 6 discusses what the published research says about the job performance of ADN and BSN nurses and whether one form of education results in a higher level of skill.

We offer these research findings, not as a definitive source, but as a guide for those seeking to create policy and educational change within the nursing field. Thus, in the final section, we offer some lessons that can be drawn from the research and explore some policy implications of the findings, including recommendations that could account for changes in nursing while ensuring access to the profession for all who desire it. We also discuss possible ways that these findings can help nurse educators modify their programs to better reflect the current needs of the field.

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Abbreviations and Acronyms

AACC	American Association of Community Colleges
AACN	American Association of Colleges of Nursing
ADN	Associate Degree in Nursing; Associate Degree Nurse
AHA	American Hospital Association
ANA	American Nurses Association
ANCC	American Nurse Credentialing Center
ASPN	Associate of Science in Practical Nursing (North Dakota only)
AONE	American Organization of Nurse Executives
BSN	Bachelor of Science in Nursing; Bachelor's Degree Nurse
CCNE	Commission on Collegiate Nursing Education
CNO	Chief Nursing Officer
DHHS	U.S. Department of Health and Human Services
HMO	Health Maintenance Organization
IPEDS	Integrated Postsecondary Education Data System
LPN	Licensed Practical Nurse
LVN	Licensed Vocational Nurse
N-PEC	Nursing Practice and Education Consortium
NACNEP	National Advisory Council on Nurse Education and Practice
NCLEX-RN®	National Council Licensing Examination for Nurses
NCSBN	National Council of State Boards of Nursing
NLN	National League for Nursing
NLNAC	National League for Nursing Accrediting Committee
N-OADN	National Organization for Associate Degree Nursing
RN	Registered Nurse
VA	Department of Veterans Affairs

1 Introduction

Are today's registered nurses (RN) well prepared for the workplace? How can educators ensure that new nurses will have the skills and knowledge they need to function in a rapidly changing healthcare environment? How should educators address the nursing shortage while maintaining a competent nurse workforce? The most appropriate educational requirements to become a nurse have long been a contentious issue within the healthcare community, and in recent years, this debate has increased in its volume and fervor.

Three distinct educational pathways lead to the standard licensing exam that all registered nurses must take. The oldest of the three is the diploma program offered by hospital-based schools. Some universities have a four-year program that leads to a bachelor of science in nursing (BSN), and community colleges (and some universities) offer a two-year program whose graduates earn an associate degree in nursing (ADN).

Since the 1950s there has been controversy about which of the three pathways provides the best preparation for entry into nursing practice. The American Nurses Association (ANA) first called for the BSN to be the minimum educational requirement for nurses in 1965, and it has reasserted that position many times, most recently in 2000. Citing the changing nature of nursing, the increased use of technology in the healthcare field, and the need to raise nursing's social prestige, a number of high-level federal organizations, including the Bureau of Health Professions (part of the U.S. Department of Health and Human Services' Health Resources and Services Administration), recently have endorsed the baccalaureate degree as the minimum educational preparation for nurses.

This increasing support for the BSN causes concern among nurse educators, employers, and others who believe that ADN and diploma programs provide quality nurse education. They note that students prepared in associate degree and baccalaureate programs pass the RN licensing exam at the same rate and that there is little to differentiate them once they enter nursing practice. Furthermore, they maintain that no studies conclusively show that nursing performance or the quality of patient care is influenced by an RN's educational background.

The growing shortage of nurses in the United States adds urgency to the debate about nurse education. More nurses are leaving the field, fewer students are enrolling in

prelicensure programs, and the country's need for RNs is growing. The American Hospital Association (AHA) estimates that as many as 126,000 nursing positions are currently unfilled (AHA 2001), and, as the number of new RNs is growing at its slowest rate in two decades, these positions are unlikely to be filled any time soon (DHHS 2002). As associate degree graduates currently make up 60 percent of all new nurses, many labor economists and healthcare administrators fear that the shortage would only increase if the ADN were eliminated.

The debate within nursing reflects two larger trends. Many professions, particularly those historically dominated by women, have attempted to increase their professional status, often by increasing educational requirements for entry into practice. Proponents of increased nurse education therefore view raising credential requirements as a way to keep pace with other occupations and increase the social prestige of nursing. In many ways, then, the debate regarding prelicensure education is about status as much as it is about technical skill and patient care.

Skill and quality of care are integral to the debate, as well, and much of the controversy revolves around questions of how best to identify the requisite skills and knowledge for competent nurse practice, thereby ensuring a highly capable nursing workforce. As such, the debate over nurse education reflects the national effort to identify the skills and competencies necessary for success in a range of occupations and professions. The National Skill Standards Board, created under the federal Goals 2000: Educate America Act of 1994, as well as state and local entities, has worked to create formal systems of skill standards that reflect changing occupational, technological, and professional demands and can be used to inform educators as they create curricula and assessments. Those involved in this effort believe that once policymakers and educators understand what workers are asked to know and do as they perform their jobs, they can develop curricula and assessments that ensure employees possess the skills essential for quality job performance. Although many of these efforts have adhered to a traditional concept of skill, which distinguish between academic and technical competencies, others have worked to integrate the "head and the hand," emphasizing the link between the two types of competencies (Bailey and Merritt 1997).

Those who support increasing the educational credentials of nurses implicitly draw on this movement when they seek to outline the knowledge needed by nurses, and when they link education and on-the-job training to the mastery of nursing skills. For nursing, this means that the skills and knowledge most necessary for competent practice must be identified prior to modifying nurse education and licensing requirements, to ensure that nurses are prepared in ways that closely mirror the requirements they face on the job.

RNs already undergo a lengthy certification process, including a standardized test based on nurse practice and designed to measure basic levels of technical knowledge and professional judgment (NCSBN 2000a). While this test addresses the most basic and concrete of nursing competencies, nurse practice is predicated on the ability of RNs to apply these discrete tasks and skills, think critically, exhibit professional judgment, and function in a highly complex work environment, activities which are not as easily measured on a standardized test. Nurse educators and policymakers are struggling to determine how best to identify, define, and teach these less easily quantifiable skills.

Again, this challenge is not unique to nursing, as creating standards for professionals is difficult (Bailey and Merritt 1997). Inherent in the definition of a professional is the understanding that professional work is varied and unpredictable. Unlike frontline manufacturing employees or clerical workers, professionals are expected to use a wide range of skills in a nonlinear manner; they must apply general knowledge and abilities to a variety of situations that are not known in advance. The lack of routine in professional jobs makes determining necessary competencies and expected outcomes difficult.

While tasks and skills are easy to recognize—they are discrete actions that are predictable and performed in a similar manner time and again—general knowledge is less so. Nonetheless, it is the effective use and application of general knowledge that distinguishes professional practice from more narrow, technical practice. The use of professional judgment, or the ability to know when and under what conditions tasks should be performed, is a hallmark of professional practice and is essential. But judgment is specific to situations and cannot be neatly identified in a list of occupational competencies. Thus, the aspects of work that most contribute to professional practice are precisely those that are the most challenging to articulate and observe.

Nurse educators and policymakers are seeking a way to ensure that RNs have both the technical and cognitive skills to meet the demands of the profession. Simultaneously, they are desperately trying to enhance the prestige of nursing while stemming a growing nursing shortage. Identifying the skills and competencies necessary for nurse practice and ensuring a tight link between these skill standards and the educational background of new RNs may be the best way to maintain the professional integrity of the profession and ensure quality nurse practice. First, though, an understanding of the unique history of nurse education and the development of the current policy debate is instructive.

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2 The Policy Debate about Nurse Education

The debate over requirements for RNs has resulted in part from the way nurse education developed in the United States. Registered nurses all must pass a standard examination to be licensed, but there are three educational pathways that culminate in the exam: hospital-based diploma programs, four-year college and university programs that lead to the bachelor of science in nursing (BSN) degree, and two-year programs, usually offered by community colleges, that grant the associate degree in nursing (ADN). This chapter presents an overview of the history of nurse education and the development of the policy debate over the most appropriate educational pathway for entry into the nursing profession. For a more detailed account of the history of nurse education generally, see Carreon (1990); for a more detailed exploration of the history and philosophy of baccalaureate nurse education, also see Simpson (1979).

History of Nurse Education and Licensing

The first formal nurse training in the United States occurred in hospital schools, which used an apprenticeship model and included a hands-on approach to nurse education. The need for standardization led to the creation of three-year, hospital-based diploma programs in the early 20th century. In the 1940s and 1950s, many of these programs became affiliated with colleges and universities in order to give their students a stronger background in science. Students received their science education through the four-year institutions while continuing to receive technical training in the hospitals. In the first half of the 20th century, the majority of American nurses received their education through these diploma programs, but the number of diploma graduates dwindled during the 1980s and 1990s. Now, only 10 percent of new RNs are graduates of diploma programs.

At the same time that apprenticeships were being formalized into diploma programs, some university schools of medicine created baccalaureate-granting nursing programs that combined general education with technical nurse education. These programs offered students traditional liberal arts study for two years, followed by two or three years of nursing-specific course work. Although they originally educated just a small portion of nurses, baccalaureate programs have grown in size and in prominence. Today,

most universities that offer the BSN have a separate nursing department or school. The course of study tends to be more theory based than it is in diploma or ADN programs, reflecting the inclusion of a university liberal arts curriculum. Modern BSN programs are usually perceived by their proponents and some hospital administrators as providing nurses with high-level critical-thinking and leadership skills, preparing students for both traditional patient-care positions as well as supervisory and administrative positions.

Motivated by a shortage of nurses in the 1950s, nursing professor Mildred Montag began a pilot program in seven community colleges to train nurses in just two years. The program succeeded, leading to the formalization of the ADN. The ADN program was designed to create mid-level nurses who would be more skilled and autonomous than licensed practical nurses (LPN)[1] but less skilled and autonomous than BSNs. Like community colleges themselves, ADN programs have expanded rapidly, giving a diverse population of students access to the nursing profession and ensuring the presence of qualified nurses in labor markets that are not near universities with BSN programs or hospitals with diploma programs. The ADN typically provides students with immediate exposure to nursing subjects and clinical practice and includes some study of the arts and sciences.

As the number of graduates of nurse education programs increased during the 20th century, the need for a standard licensure process became apparent. North Carolina was the first state to register its nurses in 1903, and by the middle of the century, all other states had followed suit. The 1923 Goldmark Report and the 1948 Brown Report both called for changed nursing school curricula, standardization, and licensure and for more structure within the nursing profession. As a result, a national, standard definition of the scope of nurse practice and a licensing examination for nurses were in place by 1948.

The RN licensure process has evolved over time. Boards of nursing now oversee nurse licensure in each state, and a national organization, the National Council of the State Boards of Nursing (NCSBN), develops and administers a national nurse licensure exam, the NCLEX-RN®. Today, all nursing students, regardless of the educational program they attend, must pass the NCLEX-RN® upon graduation in order to be licensed to practice as a nurse. Once RNs enter the workforce, differences in educational background are difficult to discern. In many healthcare facilities, hiring and compensation practices are the same for diploma, ADN, and BSN nurses, as are job tasks and expected competencies. Few in the general public are aware of the varied routes to becoming an RN.

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[1] Licensed practical nurses (LPN), called licensed vocational nurses (LVN) in California and Texas, undergo a year-long program of practical training and are not equivalent, in skill or professional role, to the registered nurse. They typically provide basic bedside care and work under close supervision. Because LPN programs are usually considered to be outside the scope of professional nursing education, this monograph does not address them.

Growing Controversy

The multiple pathways to becoming a nurse have led to a debate about the proper minimum educational requirements for entry-level RNs. Some see the debate as a discussion of the best way to professionalize nursing; others, as a way to maintain the importance of one educational program over another. Still others believe that students in the different programs have different skills, which should be reflected in workplace roles, titles, and salaries. In recent years, with the United States facing a severe nursing shortage, a changing healthcare environment, and an increase in the value of professional credentials in the workplace, the controversy has grown.

As early as the 1950s, nurse organizations began to call for the baccalaureate degree to be considered the professional standard for nursing. In 1965, the American Nurses Association (ANA) issued a position paper advocating the BSN as the entry requirement for professional nursing. The ANA proposed that nurses educated outside of four-year institutions be considered technical nurses and not be licensed as RNs.

Although the proposal drew little attention at first, support for it has increased over time. The ANA, now the largest nursing organization in the United States, has periodically reasserted its proposal, most recently in 2000. Other groups, including educational organizations and high-level federal organizations, have supported the ANA's position. This support has caused concern among those who believe that associate degree and diploma programs provide a high quality of nurse education.

Professionalism

Some of the increased support for the BSN stems from confusion about the role and professional status of nurses. According to the Nursing Practice and Education Consortium (N-PEC n.d.), the

> *lack of differentiation has resulted in unclear expectations on the part of prospective nurses, employing agencies and the public. The lack of clarity, combined with the turmoil accompanying the recent reorganization in healthcare delivery systems, has contributed to the perception by young people that nursing is a blue collar, non-intellectually demanding, financially unrewarding and insecure type of work. (4)*

BSN advocates believe that increasing the perception of nursing as a valuable and high-status profession is key to recruiting new nursing students and halting the growing nursing shortage. They assume that requiring all RNs to hold a baccalaureate degree will promote professional status for nursing, while simultaneously minimizing confusion about how nurses are trained and licensed. "Requiring increased levels of education helps to elevate nursing to more equal status with other professions" (Carreon 1990, 39).

They believe that an increase in nursing's professional status would encourage young people to enter the field, thus increasing the number of practicing RNs, and would encourage employers to pay RNs wages that are on par with wages in other professions, thereby encouraging nurses to stay in the field.

Proponents of the ADN, however, fear that requiring all nurses to earn a baccalaureate will have the opposite effect, exacerbating the nursing shortage by discouraging a significant number of potential nurses from entering the profession. In their view, the easy accessibility of ADN programs, as well as their lower cost, encourages people to enter nursing. According to a position statement made by the National Organization for Associate Degree Nursing (N-OADN) in 2000, the ADN

> *offers accessible, affordable, quality instruction to a diverse population. Initiated as a research project in response to societal needs, ADN education is continually evolving to reflect local community needs and current healthcare trends. (2000, 1)*

N-OADN and other proponents of associate degree education fear that without the ADN, a large subset of potential nursing students, including those from lower socioeconomic backgrounds, those entering a second career, members of minority groups, and limited English speakers, will be unable to access RN education and will thereby be blocked from nursing careers.

Workforce Skills

Supporters of the BSN also note rapid changes in healthcare, including decentralization and the growth of health maintenance organizations (HMO), increasing technological demands, and an aging population in need of complex medical care, when promoting the BSN degree for entry-level nurses (NACNEP 1996; Heller, Oros, and Durney-Crowley 2000). Changing job tasks within nursing, increased dependence on critical thinking, and the growth of collaboration among healthcare workers are also cited as reasons for requiring RNs to have a baccalaureate degree (AACN 2001; Carreon 1990). In particular, proponents of the BSN believe that the increase in non–hospital-based healthcare, which requires that nurses practice without direct supervision, and the increasing acuity[2] of hospital patients require that nurses have a high level of scientific knowledge, leadership abilities, and decision-making skills.

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[2] *Acuity* is the professional term for "patient sickness." Most nurses agree that shortened hospital stays, an aging patient population, and a growing emphasis on reducing healthcare costs have led to a population of hospital patients that are more ill than before. One nurse described the change as causing general hospital wards to be "like intensive care units (ICU)," making the ICUs themselves a place for "the sickest of the sick." It is assumed that a sicker patient population is in need of a more highly skilled nurse workforce.

These proponents also believe that the liberal arts focus of baccalaureate nurse education makes it a more appropriate preparation for these requirements than the ADN or diploma.

Those in favor of maintaining the ADN and diploma as routes to licensure note that there is little evidence that baccalaureate-trained nurses perform better on the job than do others. There is little published research comparing the job performance of nurses with the various types of education; what does exist dates primarily from the 1970s and 1980s, before the rapid changes in healthcare cited by BSN proponents took place. ADN advocates assert that this lack of research indicates that changing prelicensure education requirements will not necessarily ensure an increase in the quality of patient care.

They note that RNs of all educational backgrounds perform nursing duties competently and that most healthcare facilities do not differentiate among them in terms of expectations or job tasks (AACC 2000; N-OADN 2000). According to data collected by the National Council of State Boards of Nursing (NCSBN), which administers the national licensing exam (the NCLEX-RN®), pass rates for the exam are virtually identical among program types: In 2000, among U.S.-educated first-time takers of the NCLEX-RN®, 83.9 percent of BSN graduates, 83.8 percent of ADN graduates, and 83.4 percent of diploma graduates passed (NCSBN 2001). ADN proponents believe that the lack of compelling evidence that ADN and BSN nurses demonstrate different levels of competency in practice indicates that the current educational pathways for RNs are appropriate.

Growing Support for the BSN

Support for requiring the baccalaureate degree for entry into nursing has grown in the past 15 years at both state and federal levels and among national nursing organizations.

State-Level Support for BSN

In 1987, North Dakota enacted legislation requiring the BSN for RN licensure (those RNs holding an associate degree were "grandfathered" under the legislation, so that they could continue to work as nurses in the state). To date, it is the only state to have done so, although other states have proposed similar legislation (George and Young 1990). The state requires an associate degree for licensed practical nurses, the associate of science in practical nursing (ASPN); thus, associate degree in nursing programs were converted to licensed practical nursing programs. North Dakota no longer has any two-year RN programs.

Opponents of the BSN legislation feared that it would raise the cost of nurse education and thus limit access to the profession, resulting in a decrease in the number of

nurses in the state. Limited evaluations suggest that this has not occurred. Published data indicate that the number of RNs and LPNs in North Dakota has increased (Davidson 1997), by some estimates as much as 20 percent.

There are few comprehensive reviews of changes stemming from the legislation, however, and most of the available literature has been published in nursing magazines within North Dakota rather than in scholarly journals. It therefore is not clear what other effects the legislation might have had; for instance, whether RN salaries have increased or work conditions improved, and whether such changes might have led more RNs to remain in the profession. It is also not known how the policy has affected access to the nursing profession for low-income students and members of minority groups.

Limited research does suggest that North Dakota's LPNs, who receive two years of nurse education, possess a higher level of nursing competency than employers expect from LPNs (Lambeth and Milburn 1994, in Neumann 1995). Many are able to perform duties beyond the scope of an LPN's job description—in effect, performing the tasks of an RN. This allows employers to pay the lower wages of an LPN rather than higher RN salaries for the same work. Additionally, LPNs who have earned their ASPN differ only slightly in terms of professional skill and knowledge from RNs who have earned ADNs in other states; the addition of one or two courses focusing on critical thinking may be sufficient to bring North Dakota's LPNs to the same level of practice as RNs elsewhere (Neumann 1995).

One interpretation of these developments is that North Dakota's longer, more complex preparation of LPNs encourages them to become registered nurses and eases their transition to BSN programs by giving them high-level skills, thereby benefiting them in the long run (Neumann 1995). Another interpretation is that two-year programs can prepare healthcare providers to become competent RNs, regardless of title: If ASPN and ADN graduates are similar in knowledge, ability, and practice, and if both competently perform RN duties, a BSN may not be necessary to enter the nursing profession. One study is obviously not sufficient to judge the outcome of the North Dakota legislation, but the similarity in performance and competence between ASPNs in North Dakota and RNs in the rest of the country raises interesting questions regarding the necessity of the BSN.

However, not all states and state nursing organizations have been in favor of the BSN as the minimum degree for entry into practice. Because the state boards of nursing and state legislatures, not national organizations, oversee the licensure of RNs, some states have abandoned their attempts to require the BSN. For example, while 28 state nurses associations had adopted resolutions in favor of the BSN by 1988 and 25 state legislatures had introduced legislation favoring the BSN by the same year, only North Dakota succeeded in implementing such a change (George and Young 1990). In many

states, lobbying by professional associations and unions has led to the defeat of such proposed legislation or created implementation barriers to such a degree that the BSN standard has not been achieved.

Federal-Level Support

Nurses in the U.S. military and Public Health Service have long been required to hold a BSN ("Status of Nurses" 1997). In 1998, the U.S. Department of Veterans Affairs (VA), the country's largest employer of RNs, proposed making the BSN the minimum educational requirement for its professional RNs. The VA states that BSN-educated nurses as being prepared to be "accountable for...significant clinical responsibilities, which include coordination, collaboration and leadership in delivering and improving care of veterans (VA 2001, 1)." ADN and diploma nurses employed by the VA are limited in their occupational mobility and career advancement, permitted to perform basic healthcare but not to advance beyond Nurse Level I in the occupational structure (VA 1998; 1999; 2001).

A number of reports at the federal level have offered support for the BSN as the educational requirement for entry into the profession. Although these recommendations have had little direct effect on public policy, they have influenced funding priorities and increased the perception that a BSN is the preferred educational level for nurses. In 1996, the National Advisory Council on Nurse Education and Practice (NACNEP), which was commissioned by the U.S. Department of Health and Human Services' Bureau of Health Professions, issued a report stating

> *The increased complexity of the scope and practice for registered nurses requires a workforce that has the capacity to adapt to change. It requires critical thinking and problem solving skills; a sound foundation in a broad range of basic sciences; knowledge of behavioral, social and management sciences; and the ability to communicate and analyze data. Among the three primary types of entry level nursing education...the baccalaureate education, with its broader, more scientific curriculum, best fulfills these requirements. (1)*

The report called for an increase in the number of baccalaureate-educated nurses, with the goal that two-thirds of the RN workforce hold a BSN or higher degree by 2010. Although any changes in licensing requirements would occur at the state, not federal, level, the report's recommendations are significant in that they call for diverting funds to BSN programs and providing federal assistance to "convert associate degree program efforts to providing retraining opportunities for the registered nurse community" (27).

Nursing Organization Support

Some national nursing organizations have recently intensified their efforts to promote the BSN as the minimum educational level for nurses. The ANA, which offers advanced certification and credentials to nurses in specialty areas, has begun to differentiate between BSN and other nurses in its programming. Its American Nurse Credentialing Center (ANCC) now offers two levels of certification, one for BSNs and one for non-baccalaureate nurses. Although it does not call for the elimination of associate degree and diploma programs, the American Association of Colleges of Nursing (AACN) does privilege the BSN over the other entry-level nursing degrees, stating:

> *The Bachelor of Science degree in nursing is the critical first step for a career in professional nursing. The American Association of Colleges of Nursing (AACN) and other leading nursing organizations recognize the BSN degree as the minimum educational requirement for professional nursing practice. (2001, 2)*

It, along with the Nursing Practice and Education Consortium and the Tri-Council on Nursing (two consortia of nursing organizations), has begun to promote a "differentiated practice" model within nursing (Tri-Council on Nursing 2002; N-PEC, n.d.). While such models are vague, the differentiation within them appears to be predicated on educational credentials rather than on demonstrated skill and do not offer evidence that such a model will enhance the quality of patient care. Implementing such models without clear links between educational background and nursing competency may have unintended consequences, by arbitrarily prohibiting skilled nurses from performing high-level tasks.

Many questions must be answered before an informed policy decision can be made. For example, what types of students would be most affected by new educational policies, and how would the policies affect the demographics of the nursing profession? What are the curricular and pedagogical differences between ADN and BSN programs? What do we know about how these differences influence RN job performance? What are the healthcare changes that most affect new RNs, and how can prelicensure programs address these changes?

The following chapters on nurse demographics, the difference between the ADN and BSN, job tasks, current research, and our recommendations may assist policymakers as they address these important questions.

3 Nursing Demographics and Workforce Diversity

There are over 2.5 million registered nurses in the United States, more than 80 percent of whom are employed in nursing (DHHS 2002). Nurses make up the largest proportion of healthcare workers in the country (GAO 2001). The demand for RNs is rapidly increasing, and the U.S. Department of Labor projects that the nurse population must increase by 26 percent over the next 10 years in order to fill the country's healthcare needs (DOL 2001).

Because the need for healthcare is relatively immune to fluctuations in the economy, nursing is a stable career and pays well in comparison with other occupations that require some postsecondary education. Nationally, the median annual salary for RNs is $44,840, with a high of $56,500 in Maryland and a low of $36,300 in Iowa (DOL 2002). In comparison, the national median wage is $36,500 for computer support specialists and $35,400 for legal assistants and paralegals. Nursing's position as a high-wage, high-skill profession that can be entered through affordable and convenient associate degree programs means that it is an important pathway into the middle class for individuals from economically disadvantaged groups.

In addition to giving minorities and low-income workers a desirable career, the nursing profession can provide the healthcare system with a diverse population of workers. An RN workforce representative of American society would benefit both the healthcare field itself and members of socioeconomic groups that are traditionally marginalized in the United States. Patient care is sometimes compromised when language or cultural barriers lead to reluctance for patients to seek or comply with medical treatment (Institute of Medicine 1996). Many people believe that a diverse population of nurses would be better able than a nondiverse population to minimize the social and cultural barriers between healthcare providers and patients and thus contribute to the provision of excellent, culturally and linguistically sensitive, care for a wide range of patients.

Diversity in nursing is also an equity issue. Because the demographic groups that are the least represented in the profession (with the exception of white males) tend to be socially and economically disadvantaged, promoting diversity in nurse education can

open access to nursing careers for those who are most in need of such an opportunity. Recent data indicate, however, that the nurse population is not as diverse as is American society (Coffman et al. 2001; NACNEP 1996). Because ensuring that all types of students have access to nurse education is key to promoting diversity in the profession, policymakers need to understand how their proposals might affect future nursing students of all demographic backgrounds. Policymakers should carefully address the possibility that current proposals to change the educational requirement for entry-level nurses could hinder, rather than promote, diversity in nursing.

Demographics of Nurse Education Programs

Because of the rapid decrease in diploma program enrollments (according to the NCSBN, only 10 percent of newly licensed nurses in 1999 were diploma-program graduates), we focus here on the demographic makeup of associate degree and baccalaureate programs.

Traditionally, white females have dominated the nursing profession. Although that is beginning to change, the majority of RNs are still white (86.6 percent) and female (94.6 percent). Approximately 30 percent of current licensed RNs received their initial nursing education in diploma programs, 40 percent became licensed through associate degree programs, and the remaining 30 percent earned baccalaureate degrees (DHHS 2002). Because not all registered nurses are employed in the field, these percentages may not precisely correspond with the education of practicing RNs—nurses with one educational background or from particular demographic groups may be more likely to leave the field than others. Such patterns would influence the overall educational makeup of practicing nurses. Information on this topic is not available, however.

Current data indicate that nursing students and recently licensed nurses are a slightly more diverse group than the RN population as a whole. According to a preliminary analysis of year 2000 data from the U.S. Department of Education's Integrated Postsecondary Education Data System (IPEDS), 10 percent of new RNs are male and slightly more than 20 percent are members of ethnic minorities (U.S. Department of Education 2001). Participation in ADN and BSN programs differs only slightly by race and ethnicity. As indicated by Table 3.1, the overall graduation patterns are generally similar for both ADN and BSN programs, with non-Hispanic white students making up slightly less than 80 percent of program graduates for both.

It is important to recognize, however, that the IPEDS data may mask other variations among program graduates. The first is that the demographic data for BSN graduates do not differentiate between those who started their education in ADN and diploma programs but continued in BSN programs, and those whose entire nursing

Table 3.1

ADN and BSN Program Graduates by Gender and Ethnicity: 2000

	Female	Non-Hispanic White	Hispanic	Black	Asian	Native American
Percentage of ADN Graduates	89.3	76.4	6.3	10.0	3.9	1.1
Percentage of BSN Graduates	90.0	78.1	3.8	9.9	4.1	0.7
Percentage of All Nursing Program Graduates	90.0	77.0	5.0	9.9	4.0	0.9

SOURCE: AUTHORS' ANALYSIS OF U.S. DEPARTMENT OF EDUCATION IPEDS DATA SET, 2001

Note: Statistics on ethnicity may not add up to 100 percent due to rounding

education took place in baccalaureate programs.[1] Some RNs use the ADN program as initial entry into nursing, thus enabling them to work as an RN while attending school to earn their baccalaureate degree. This is a particularly useful entry mechanism for economically disadvantaged women or single parents. If these transfer students are demographically different from first-time nursing students in BSN programs, the aggregate BSN data may be misleading.

Data collected by the American Association of Colleges of Nursing, which represents four-year degree programs and graduate nursing programs, indicate that this concern may not be warranted. Their survey of 548 baccalaureate and higher degree institutions indicates that 2001 BSN graduates receiving their first nursing degree were only slightly more likely to be white than RN-completion graduates in that same year (AACN 2002). These data do not, however, indicate whether the BSN-completers earned their initial degree through an ADN or a diploma, nor do they explore the socioeconomic status or age of students. Further analysis and data collection could confirm that there are not large demographic differences between traditional BSN students and BSN completion students, thereby helping to allay fears that promoting the BSN will inhibit career growth for individuals from minority backgrounds.

Because more new nurses graduate from ADN programs than from BSN programs, statistics that look at the overall percentage of students in each program do not

[1] Many universities offer BSN completion programs that give licensed RNs who hold an ADN or diploma credit for their past education. Estimates of how many ADN graduates enter such programs range from 10 to 30 percent.

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indicate the number of students, in real terms, enrolled. In other words, although approximately 10 percent of students in both BSN and ADN programs are black, the total number of black students graduating from associate degree programs is greater than that in baccalaureate degree programs.

Despite its limitations, current data are instructive. They indicate a growing shift in the gender and ethnicity of RNs. New nurses are still predominantly female, but less so than the nurse population generally. Women and men are both as likely to choose associate degree programs as baccalaureate degree programs, suggesting that changing entry-level standards for RNs would probably not affect the gender ratio of the nursing population.

Although overall patterns of minority enrollment are similar for the two- and four-year programs, there are some differences in graduation rates within minority groups. As Table 3.2 shows, some groups are more likely to graduate from ADN than from BSN programs, indicating that changing educational requirements could have an undue impact on these groups. For example, although Native American students make up approximately 1 percent of total graduates, a higher percentage graduate from two-year programs than from four-year programs. A similar pattern occurs among Hispanic students. This suggests that a baccalaureate requirement could have an adverse effect on the future representation of Hispanics and Native Americans in the nursing profession.

Data from the American Association of Community Colleges (AACC 2001) also indicate that the proportion of Hispanic and Native American graduates grew 14 and 32 percent, respectively, between 1995 and 2000. They also increased for Black and Asian

Table 3.2

Graduation from ADN and BSN Programs by Demographic Group: 2000

Total Year 2000 graduates	ADN	BSN
Female	49	51
Male	51	49
White	49	51
Hispanic	60	40
Black	50	50
Asian	48	52
Native American	60	40

SOURCE: AUTHORS' ANALYSIS OF U.S. DEPARTMENT OF EDUCATION IPEDS DATA SET, 2001

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students, though more slowly. It therefore appears that the associate degree may be becoming an increasingly appealing educational option for groups that have traditionally been less likely than whites to enter nursing. Although the reasons for this increase are uncertain, it may be that the lower cost and shorter length of the ADN program make it an appealing option for students who are unable to attend traditional four-year programs.

The average age for all recent nursing graduates is 30.9, with a distinct difference in the average ages of ADN graduates (33.2) and BSN graduates (27.5) (DHHS 2002). This difference probably reflects the concentration of older students in two-year programs and the tendency of younger students to enroll in baccalaureate programs, which offer a more traditional college experience. For example, in 1996, more than 70 percent of new RN graduates between the ages of 35 and 40 graduated from ADN programs; during the same period, less than 40 percent of those aged 20 to 25 graduated from such programs (Auerbach, Buerhaus, and Staiger 2000).

Because, as one community college administrator noted in an interview, the average associate degree student is "thirty-one, with two kids and a job," the flexibility, geographic convenience, shorter length, and lower cost of the ADN program may appeal to older students, particularly career changers, single parents, and individuals returning to the workforce. If the higher cost and greater length of BSN programs are barriers to entry for older or parenting students, eliminating ADN programs could have a negative impact on these students' ability to enter the nursing profession. Understanding which factors are disincentives and which are barriers could help institutions that educate nurses serve a wider array of students, and could make potential negative outcomes of policy change clear.

National data on the marital status of BSN and ADN students have only recently been released and have not yet been analyzed. IPEDS does not include data on students' socioeconomic status or English proficiency. Enrollment patterns cannot be fully understood without these data, so gathering this information should be a priority for those who study RN prelicensure programs.

Understanding the enrollment patterns of socioeconomic and linguistic groups also could give policymakers important clues about how to ensure access and equity in nurse education. Would changing prelicensure requirements prohibit entry into nursing for those who cannot pay for, and afford to stay out of the labor market while attending, four years of schooling? Can students whose first language is not English complete four-year programs that have a heavy emphasis on liberal arts and language-intensive study? Considering the need for multiple languages to be represented in healthcare, such barriers could be detrimental to the quality of patient care.

Another area that is not documented is the admissions criteria for both types of programs. Unlike the open admission policy at most community colleges, associate

degree programs in nursing have rigorous selection standards and are often one of the most prestigious areas of study in the college. Thus, it is not clear that students in those programs are less academically able than are students in four-year programs.

Current information about demographic patterns within nurse education, and the potential impact of policy changes that might be made on the basis of such patterns, is incomplete. Some evidence indicates that making the BSN the entry-level credential for nursing will not influence the overall demographics of the profession, but other evidence suggests that minority groups, who enroll at higher rates in ADN programs than non-minority students do, could be adversely affected. Those who are working to redefine nurse education should be mindful of this lack of clarity. Particularly in light of the growing need for a diverse nurse workforce, it is important that proposed changes in nurse education requirements do not inadvertently cause any groups of students to lose access to prelicensure education, and thus to the nursing profession.

The goal of workforce diversity must be balanced with the need for high-quality educational preparation. Policymakers must understand any curricular and pedagogical differences there may be between ADN and BSN programs and any ways such differences may affect the job performance of new RNs. This is explored in the next chapter, in the hope that current research can provide insight into the workplace outcomes of ADN and BSN students and thus indicate whether one form of nurse education is preferable to the other.

4 The Differences between ADN and BSN Programs

There is little research comparing ADN and BSN programs, particularly in regard to differences in curricular content, pedagogy, or students' clinical experiences. While the two programs are clearly different in that the ADN is intended to be completed in a shorter period of time than the BSN, the added benefit of the BSN is unclear. Although all nursing programs must adhere to basic guidelines due to accreditation requirements and the need to prepare their students for a standardized licensing exam, there is a large degree of flexibility within those parameters, making it difficult to compare programs.

Most programs focus on use of the nursing process[1] and the ability to apply technical knowledge to practice, but their pedagogical approach varies. Some programs require extensive prerequisites or courses in science and nursing theory; others offer immediate access to hands-on experience and allow theoretical knowledge to be developed later. Some integrate theory and practice; others teach the two as distinct forms of knowledge. While both the ADN and BSN are designed to ensure that students function at a high level in the workplace, some argue that the BSN prepares more theoretically oriented nurses who are better prepared to take on leadership roles.

Our conversations with nurse educators and a review of nurse education programs suggest that there may be less variation in the theoretical focus, science course work, and clinical experience in the two types of programs than is commonly believed. The exact nature of any differences between the two is not wholly evident, however, due in large part to the variation among program types and the lack of comparative research. The resulting lack of clarity presents difficulties for those who are trying to determine which form of education best prepares beginning nurses for practice.

The dearth of research on program experiences and outcomes stems in large part from the difficulty in comparing the two types of programs and the apparent variability

[1] The nursing process is the classic approach to performing nursing studies, in which RNs apply a stage theory of decision making to the provision of care. The five stages of the process are assessment, analysis, planning, implementation, and evaluation (NCSBN 2000b).

even among programs of the same degree type. In an informal analysis of materials from four ADN and four BSN programs in five states, we found that each program had different prerequisites and entry requirements.[2] The programs also varied in the amount of hands-on and applied study, as well as in lab time versus time spent in clinical placements. Complicating the comparison is the question of defining the meaning of "credit" from school to school, and the comparability of courses offered on a quarter system versus those on a semester system.

Our analysis revealed that differences between the two types of programs are less obvious than one might expect. With prerequisites and general education courses factored in, most ADN programs take three or more years to complete. Applicants to these ADN programs were asked to complete a significant number of science courses and undergo screening prior to admission—requirements that are somewhat comparable to those of BSN programs. Interviews confirmed that such prerequisites and admissions requirements are common at the two-year level. Because BSN advocates cite baccalaureate programs' emphasis on the liberal arts as one reason that they are preferable to associate degree programs, this apparent similarity between program types warrants further exploration. Table 4.1 compares the program requirements for the eight schools whose program materials we reviewed.

Our interviews with nurse educators also indicate that ADN and BSN students have similar educational experiences. Regardless of the program, most students complete the equivalent of one or two years of general education course work and spend between two and three years in nursing-specific classes. None of the nurse educators interviewed believed that an ADN could be completed in two years.

It appears that traditional distinctions between BSN and ADN programs are diminishing as schools modify their programs to meet current employer needs. For example, some baccalaureate programs are increasing their emphasis on clinical experience. One four-year school in New York State recently revised its curricular sequence so that students begin clinical work within a year of entering the program. According to a professor at this institution, the goal is to "get them as much hands-on practice, as soon as possible" because "institutions want a high level of functioning in the graduates. They want us to do more at an earlier stage." The school decided that students would learn technical skills more effectively if they saw them in practice rather then read about them in a book. Likewise, many associate degree programs have added courses in

[2] This analysis is a informal study of eight easily accessible program descriptions. The eight programs were chosen based primarily on their geographic location and the ease with which we could access their program materials on the World Wide Web. The analysis is not intended to be a representative sample or scientifically valid study and is not intended to lead to definitive conclusions; rather, we use it to illustrate the variation that exists and to provide information that may inform future, more systematic, research.

community health and nursing theory, areas that have long been seen as the purview of baccalaureate programs, in response to the growth of the community health sector and the decline of traditional hospital employment.

The nurse educators we interviewed tended to agree that baccalaureate programs emphasize the liberal arts and management skills to a slightly greater extent than associate degree programs do, but they could not quantify this difference. According to a professor in a four-year institution in the northeast, BSN nurses "have more academic knowledge than others and are more aware of the theory, the history of nursing. But clinically, [the two types] are probably equal." A nurse administrator at a southwestern community college explained that the general education provided by BSN programs teaches citizenship and leadership skills—knowledge that allows one to "become a better human being. But, if you are a patient, you wouldn't notice this, or the difference between the two types of nurses."

A 2001 report released as part of the California Workforce Initiative confirms our conclusion that program requirements are inconsistent (Coffman et al. 2001). According to that report, the prerequisites for nursing programs vary, as does the total time it takes to complete a degree, particularly among associate degree programs. The authors concluded that the lack of research comparing preparation of BSN and ADN graduates may be because there is no real difference between the two forms of RN education:

> *In California, an RN who has graduated from an ADN program with 112 units and an RN who has graduated from a BSN program with 120 units would be very hard to distinguish in practice. (48)*

Aside from this report, the most recent comparative study on the subject is a series of 1988 reports by Hanson, surveying California prelicensure curricula (in Coffman et al. 2001). Hanson reports a high degree of variability among credits required for graduation.

In some respects, the amount of curricular variation is surprising, given that nursing programs are encouraged (though not required) to become accredited by an external nursing body. Although accreditation should provide some consistency among programs, the presence of more than one accrediting body inhibits program uniformity. The National League for Nursing Accrediting Committee (NLNAC) accredits both ADN and BSN programs; others, such as the Commission on Collegiate Nursing Education, accredit only baccalaureate and higher degree programs. Accredited nursing programs, whether ADN or BSN, must adhere to curriculum guidelines that address broad areas of curricular focus and assessment methods (NLNAC 2001; CCNE 1998).

However, accreditation requirements vary within these organizations and the requirements tend to be vague in terms of what subject matter should be taught and which pedagogical approaches used. For example, the NLNAC (2001) requires that

Table 4.1 Graduation Requirements by Program and Degree Type

	Admissions Requirements	Prerequisites	Applied Learning, Such as Clinical Practice, During Program*
ADN PROGRAM:			
Bakersfield College, California	Completion of all prerequisites with a C or higher and overall GPA of 2.5. Priority given to county residents.	Completion of 26 credits in math, science, and English; CPR and nurse assistant certification.	18.5 credits of clinical laboratory work.
Greenfield Community College, Massachusetts	Admission to the college and completion of prerequisites or a high school GPA of 80%.	Completion of 10 pre-nursing course credits and college chemistry, or graduation in the top third of high school class with a GPA of 80% or better.	Average of 2 days per week in a clinical setting for 4 semesters.
Montgomery College, Maryland	Completion of prerequisites. Preference given to county residents.	Completion of high school chemistry or equivalent; proficiency in math and English.	Average of 12.5 lab and clinical hours per week for 4 semesters.
Weatherford College, Texas	Competitive admission based on GPAs and NET scores.	Completion of 15 credits in math and science.	15 credits (1 course each semester plus one summer semester).
BSN PROGRAM:			
California State University, Bakersfield	Competitive admission based on academic performance and completion of prerequisites.	Completion of 9 courses, including English, science, psychology, and statistics, with a grade of C or better and a 2.5 GPA.	38 of the 83 nursing credits are for clinical and practical course work.
University of Massachusetts, Amherst	Competitive admission based on grades, leadership, references, and work experience.	Completion of 61 credits, including science, statistics, nursing, and general education, with a grade of C or better and a 2.5 GPA.	17 credits of clinical practicum, 4 credits of clinical internship.
Salisbury University, Maryland	Admission to the major upon university admission.	Must maintain 2.5 GPA in the first two years of school to continue in the program.	15 credits of clinical course work, 3 credits of clinical practicum, 3 credits of internship, all during last 2 years of program.
University of Washington, Washington	Competitive admission based on an essay, recommendations, résumé, and grades; admission to the state university system.	Completion of two years of college-level course work, including writing, math, and science, with a GPA of at least 2.0.	19 quarter credits of practicum and 18 quarter credits of "intensive professional practice nursing."

Note: We have cited requirements and credits directly from program materials, using the schools' terminology, even if that terminology was vague.

*Clinical credits are both separated out as their own category (applied learning experiences) and counted as part of the nursing credits required.

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CREDITS REQUIRED FOR DEGREE^			ESTIMATED COMPLETION TIME		
In Nursing	**In Science**	**In General Education or Liberal Arts**	**For Prerequisites**	**For Program After Prerequisites Have Been Met**	**For Complete Program**
36	22 as prerequisites; 4 during nursing program	8 as prerequisites; 15 before or during nursing program	2 or 3 semesters	4 semesters	6 or 7 semesters
40	12 during nursing program	18 during nursing program	0 to 2 semesters	4 semesters	4 to 6 semesters
38 semester hours	3 courses before or during nursing program	7 courses before or during nursing program	0 to 1 semesters	4 to 5 semesters	4 to 6 semesters
40	12 as prerequisites; 3 during nursing program	3 as prerequisites; 13 during nursing program	1 or 2 semesters	2 years, including one summer	2.5 to 3.5 years, including at least one summer
83 quarter credits during program	21 quarter credits as prerequisites; 13 quarter credits during program	25 quarter credits as prerequisites; 8 quarter credits during program	2 years	3 years	5 years
2 as prerequisites; 55 during program	23 as prerequisites; 3 during program	36 as prerequisites; 3 during nursing program	4 semesters	4 to 5 semesters	8 or 9 semesters
51 during the last 2 years of program	24 during the first 2 years of nursing program	42 during first 2 years of program; 6 during second 2 years	N/A	4 years	4 years
86 quarter credits during program	26 quarter credits prior to entering nursing program	64 quarter credits prior to entering nursing program	2 years	2 years	4 years

^Nursing credits are credits earned in courses directly related to nursing and nurse practice, as indicated by the inclusion of terms such as "nursing," "illness," "care," and "health" in course titles. Science courses may be relevant to nursing but are not actually nursing courses. For example, anatomy would be considered a science course. General education and liberal arts courses include English, math, human development, psychology, and electives.

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ADN curricula include from 60 to 72 credits, no more than 60 percent of which can be from nursing courses. Their baccalaureate requirements, however, give no such specifications. The NLNAC requirements also state that all nursing degree programs must assess and document student progress, but do not specify how. The CCNE guidelines also give no specifics. None of the national accreditation boards require a specific amount of clinical experience.

To complicate matters, states have a range of accrediting policies, with some requiring that nursing programs be accredited by national agencies and others merely requiring accreditation from state boards of nursing. Some, such as Maryland, have clinical requirements, but many do not specify the minimum number of hours that students must spend in clinical practice before they can be licensed as RNs. The result of these varied accreditation requirements is that programs look very different both within and across degree levels, causing difficulty for researchers trying to make comparisons among them.

The existing literature focuses on curricular changes in BSN and ADN programs; a search of various databases, including CINAHL, Education Full Text, and MEDLINE, found no literature comparing the two program types. The articles about curricular change typically consist of authors advocating new topics to be studied by students in either baccalaureate or associate degree programs, but do not specifically outline what the programs presently look like, or how ADN and BSN programs compare with one another. The literature rarely addresses both types of programs simultaneously. Thus, while inferences about current ADN and BSN program content may be made based on the proposed changes, the current differences between associate and baccalaureate programs are not clear.

There is also little literature comparing the pedagogical practices and theories of learning used by BSN and ADN programs. Many of the nurse educators we interviewed and policy documents we examined note that ADN programs move students into clinical and real-life settings quickly, while BSN programs spend more time teaching traditional science and nursing theory in the classroom before allowing students a chance to practice nursing skills. While many believe that a strong grounding in theory allows BSN students to learn practice more effectively, not all agree. A number of writers in the nursing field believe that practicing skills while simultaneously learning theory is a powerful educational tool. Clinical experience may be more important than traditional instruction for developing such essential nursing skills as critical thinking:

> *When talking about clinical judgment abilities, the actual clinical experience may be the critical information variable in beginning nurses. The experience of assessing the state of the patient, taking actions, and evaluating those actions in repetitive clinical situations provides information and feedback that enable nurses to make finer discriminations and to recognize salient clues. (Sanford, Genrich, and Nowotny 1992, 73)*

Coffman et al. (2001) echo this sentiment in their recommendation that efforts be increased to ensure that all California nursing students receive strong clinical training and exposure to the practice of nursing. The fact that some four-year programs seem to be modifying their curricula to reflect this pedagogical approach seems to confirm its relevance to current nurse education and practice.

Further study is needed to better understand the curricular and pedagogical differences between the two types of programs and to explore how the differences might affect the nursing ability of new graduates. Thus, one important area for future research is the relationship between nursing theory and nursing practice: Does emphasizing theoretical knowledge lead to less practical skill; does a lack of theoretical knowledge inhibit nurses' performance; or does the way theory and practice are taught in nursing programs have an effect on subsequent job performance? Other areas in which more study is needed are the extent to which contextualized and work-based learning experiences are used in nursing programs and whether they are effective for teaching nursing skills to all students, and whether the degree to which ADN and BSN students study the liberal arts and sciences affects nurse practice.

Understanding what student nurses learn is, of course, only one piece of the puzzle. It is also important to understand what new nurses are expected to do on the job and to ensure that the nurse education system prepares RNs to meet those expectations. The next chapter looks at what is known and what is not known about current nurse practice.

5 Entry-Level Nurse Practice and Job Tasks

Healthcare in the United States is changing dramatically as a result of the increase in managed care and its focus on cost-cutting, new medical technology, and changes in the patient population (AACN 2001; NACNEP 1996). How well do nursing curricula and pedagogy of nursing programs reflect these changes? Preparing nursing students to meet the demands of the workplace requires that the specific tasks new nurses are asked to perform be directly addressed in the curriculum. Understanding the daily activities of beginning nurses can help nurse educators create relevant curricula, assist policymakers in evaluating the effectiveness of nursing programs, and provide insight into how nurse education must change in order to create a new generation of skilled nursing professionals. As with many other areas of nurse education, however, there is less information available about new nurses' daily tasks than one would expect.

Throughout the 1990s, hospitals were restructured in order to lower costs and increase profitability (Buerhaus and Staiger 1999). The spread of managed care has promoted the growth of less-expensive alternatives to hospitalization, so healthcare is increasingly being delivered in outpatient clinics and long-term care facilities (GAO 2001; Buerhaus and Staiger 1999). Cost-saving efforts have reduced the average length of patient hospitalizations. Technology has become increasingly important as technical advances have been used to decrease costs, improve patient care, and even prolong patients' lives (GAO 2001). All of these changes in healthcare and the general aging of the U.S. population have resulted in hospital patients being more ill than they were in the past (GAO 2001; Peter D. Hart Research Associates 2001).

As a result, the role of the RN has changed. In addition to performing traditional nursing tasks, RNs are now often expected to function as part of a team, share responsibilities with other healthcare professionals, and perform administrative duties, such as paperwork related to managed care (Heller, Oros, and Durney-Crowley 2000). Hospitals are hiring fewer registered nurses, opting instead to hire less-expensive nursing assistants, including LPNs (Buerhaus and Staiger 1999). RNs are often expected to supervise these workers while coordinating increasingly complex patient care processes. One nurse educator we spoke with described nurses as acting as "traffic cops. They need to understand

what everyone else does, how all other healthcare workers function" in order to ensure effective healthcare delivery.

The growth of alternative healthcare delivery systems has also led many registered nurses to leave their traditional place of employment, the hospital, to work in other settings. Until the early 1990s, more than two-thirds of RNs were employed by hospitals (Buerhaus and Staiger 1999); by 2000, a near 10-percentage point drop in hospital employments meant that fewer than 60 percent of RNs were employed by acute-care facilities (DHHS 2002). In contrast, the home healthcare industry, while still employing only 7 percent of RNs overall, has increased significantly over the past two decades; it is now the biggest source of new nursing jobs (Buerhaus and Staiger 1999). Employment of RNs in outpatient and ambulatory care facilities, visiting nurse services, nursing homes, and community-based health services such as health centers and occupational services programs showed strong growth beginning in 1994 (Institute of Medicine 1996).

These changes—decentralization of the RN workforce, increasing technology, sicker patients, and a changed work environment—have led many to believe that the underlying skills and knowledge needed by nurses have changed as well. One report on the healthcare industry found that all healthcare workers, nurses included,

> *have assumed greater responsibility for explaining complex procedures to patients, were working with patients who were older or had language difficulties, and were required to produce more complex written documentation....Moreover, in many occupations, healthcare employees were working more independently from physicians, because significant healthcare services had been moved out of hospitals....As a result, employees needed better decision-making skills and the ability to function with more autonomy in a high-paced, stressful work environment. (Hudis et al. 1992, ix)*

With the increased independence and responsibility that come from working outside of a structured hospital setting, RNs need a wider range of knowledge, a higher degree of critical thinking skills, and the ability to address atypical patient reactions and needs (NACNEP 1996).

It is not clear whether the changes in nurse practice have affected new nurses in the same way that they have affected more experienced RNs. While all nurses are confronted with sicker patients and more technology, job activities may differ based on experience, with newer nurses performing more basic tasks and taking on expanded roles as they gain in experience and competence. The movement of nurse employment out of hospitals appears to be concentrated among more experienced nurses, and the majority of nurses are first employed in hospitals. In a 1999 survey of newly registered nurses, 82 percent stated that they were employed in a hospital setting; only 10 percent worked in long-

term care facilities (NCSBN 1999). Our interviews with nurses and nurse educators indicate that many of the more advanced tasks that nurses perform in outpatient settings would not be conducted by new nurses of any educational background; experience is as important as education in developing the necessary competencies for advanced nursing.

Because there is little literature reflecting the current job tasks of beginning nurses, it is difficult to determine what the average new RN does on a typical day or how those tasks have changed over time. It is also not clear what competencies employers expect from new nurses or what job tasks new RNs are expected to perform frequently. Additionally, the literature that reports on the actual tasks performed by RNs is neither readily available nor recent enough to reflect how the changing healthcare environment might have changed competency expectations over time.

Nurse researchers disagree about whether entry-level RNs who are trained in ADN and BSN programs should have the same competencies. Those who believe that the two types of programs lead to different competencies tend to follow a technical versus professional model: ADNs are qualified to perform routine, technical nursing tasks, but not more complex duties that require professional judgment. Other nurse educators believe that all entry-level nurses are similarly competent and that all forms of prelicensure education lead to essentially the same skills, both technically and professionally. Thus, some of the literature refers to the job tasks and competencies of ADN nurses, while some refers more generally to entry-level nurses. Perhaps because of the common assumption that BSNs are better or more educated nurses, very little of the literature is about the competencies of new BSN nurses alone.

According to the U.S. Department of Labor (2001), the general work activities of the RN are the following:

- Monitoring processes, materials, and surroundings
- Documenting and recording information
- Communicating with other workers
- Getting information needed to perform necessary job tasks
- Assisting and caring for others
- Updating and using job-relevant knowledge

The Department of Labor does not explore the extent to which each of these tasks is performed, nor does it attempt to differentiate nurses' work activities and skills according to their educational backgrounds.

In 1990, the National League for Nursing (NLN) published a list of 25 competencies that an entry-level RN who was educated in an associate degree program should have (Deering-Flory and Neighbors 1991). These competencies are listed in Figure 5.1.

Figure 5.1

1990 NLN-ADN Competencies

as cited in Deering-Flory and Neighbors 1991

1. The nurses develop, implement, and evaluate individualized plans of care.
2. The nurses use nursing process as a basis for decision making.
3. The nurses establish and maintain effective communication with clients, families, significant others, and health team members.
4. The nurses promote participation of the client, family, significant others, and members of the healthcare team in the plan of care.
5. The nurses demonstrate clinical competence when providing client care.
6. The nurses make decisions and take actions that are consistent with the standards for nurse practice and licensing laws.
7. The nurses manage an environment that promotes clients' self-esteem, dignity, safety, and comfort.
8. The nurses manage care for a group of clients in a time- and cost-effective manner.
9. The nurses follow the policies and procedures of the employing institution.
10. The nurses promote effective team relationships.
11. The nurses provide direction and guidance to other healthcare workers.
12. The nurses are accountable for performance of nursing activities delegated to other workers.
13. The nurses obtain consultation when the situation encountered is beyond the nurses' knowledge and experience.
14. The nurses utilize appropriate channels of communication within the organizational structure.
15. The nurses promote continuity of client care by utilizing appropriate channels of communication external to the organization.
16. The nurses participate in evaluation of the client care delivery system.
17. The nurses practice within the ethical and legal framework of nursing.
18. The nurses foster high standards of nursing practice.
19. The nurses participate in learning activities to maintain safe practice.
20. The nurses construct a course of action when confronted with ethical dilemmas in practice.
21. The nurses seek assistance for colleagues whose behaviors indicate a potential impairment.
22. The nurses participate in self-evaluation and peer review.
23. The nurses participate in agency committees and conference.
24. The nurses participate in professional organizations.
25. The nurses participate in research conducted in the employing institution.

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The NLN had offered a statement on the "Characteristics of Baccalaureate Education in Nursing" in 1986 (Carreon 1990). The NLN's expectations for BSN nurses include providing professional nursing care, synthesizing theoretical and empirical knowledge, using the nursing process, using leadership skills in nursing, and evaluating research for use in nursing practice. Both sets of NLN competencies are guidelines for what new nurses should know, not indicators of what they are actually asked to do on the job, and thus are of limited use for the purposes of this monograph. In addition, both are dated and do not reflect the changes in healthcare that have taken place in the last decade.

More recently, some nursing organizations have attempted to define the expected practice of ADN- and BSN-educated nurses. A 1998 report published by the American Association of Colleges of Nursing (AACN) used focus group and interview data to determine the knowledge that baccalaureate-educated nurses should possess upon graduation. The document, *The Essentials of Baccalaureate Education for Professional Nursing Practice*, did not directly address what BSN nurses actually do on the job, nor did it examine if BSN job tasks substantially differed from ADN or diploma nurses' job tasks. Instead, it focused on interviewees' opinions of what BSN nurses should know in order to be able to perform their job well and used an implicit assumption that such knowledge (and subsequent job tasks) substantially differed from that of ADN and diploma nurses.

Nonetheless, because the *Essentials* draws on focus groups and interviews with those in the field, it offers information regarding the tasks and skills that novice nurses, at least those with BSNs, are likely to be asked to perform on the job. The document envisioned nurses as providing both physical and psychological care as well as functioning as patient advocates and educators. It also saw nurses as functioning in a management role, whereby they delegate tasks and supervise assistive personnel. The resulting competencies are listed in Figure 5.2.

Some researchers have attempted to identify the specific tasks that entry-level RNs are asked to do on the job. Because this research is often done in conjunction with an evaluation of job performance and identifies RNs' educational backgrounds, it is difficult to discern if all entry-level nurses, or only those with either an ADN or a BSN, are asked to do the same tasks. As the authors of one such study noted, "there was no way to be certain that respondents' answers were specific to ADN graduates.... It is a concern of the researchers that some respondents view 'graduate nursing behaviors' without differentiating the level of educational preparation" (Diede, McNish, and Coose 2000). Despite their limitations, such studies are instructive because they report on entry-level nursing as it was being practiced at the time of the study.

Deering-Flory and Neighbors (1991) asked directors of nursing to assess the appropriateness of the competencies set by the NLN and ADN graduates' ability to

Figure 5.2

Expected Competencies and Knowledge of the BSN-Prepared Nurse

Excerpted from *The Essentials of Baccalaureate Education for Professional Nursing Practice*, AACN, 1998, page 6.

The role of the beginning professional nurse continues to encompass three broad areas:

- Provider of direct and indirect care to individuals, families, groups, communities, and populations;
- Designer, manager, and coordinator of care; and
- Member of a profession.

To implement this role fully, the nurse must:

- Base practice on current knowledge, theory, and research;
- Assume responsibility and accountability for practice;
- Form partnerships with patients and with other healthcare professionals;
- Serve as a member and leader within interdisciplinary healthcare teams;
- Communicate, collaborate, and negotiate;
- Practice across a variety of settings and with diverse populations;
- Access, assemble, and evaluate health information;
- Teach patients;
- Advocate for patients within the healthcare delivery system;
- Delegate and supervise patient care activities;
- Allocate and manage physical, fiscal, and human resources;
- Evaluate nursing care outcomes;
- Participate in research and utilize research findings;
- Assume responsibility for life-long learning and plan for professional career development;
- Participate in political and regulatory processes; and
- Participate in shaping the healthcare delivery system.

meet the competencies. However, the authors did not ask respondents how often new nurses performed particular tasks, but only if the directors considered the tasks to be important and if asked to perform them, whether or not associate degree nurses could do so. Questionnaires were sent to a random sample of nursing directors in six southern states. Respondents were asked to rate each of the 25 NLN competencies on a five-point scale, twice. The first time, they were asked if the competency was a realistic one to expect of new ADN graduates; the second time, if the new graduates were able to adequately perform the competencies.

The directors indicated that the NLN competencies represent realistic expectations for the performance of newly certified ADN graduates. The competencies they deemed the most appropriate were:

- Following the policies and procedures of their employers.
- Obtaining consultation when they encounter a situation beyond their knowledge and experience.
- Practicing within the ethical and legal framework of nursing.
- Fostering high standards of nursing practice.
- Participating in learning activities.

During the second round of rating, most respondents indicated that the ADN graduates were barely meeting the NLN competencies. Because the study did not compare BSN and ADN graduates, it is not clear whether the respondents considered the low level of competency to be a function of the nurses' educational background or a consequence of their inexperience. Additionally, this study did not directly measure the frequency that nurses performed the tasks or at changes in job tasks or job performance over time.

A more recent study (Diede, McNish, and Coose 2000) surveyed healthcare employers in Oklahoma. Respondents were asked to rank each of 47 tasks as being essential, important, desirable, or unnecessary job functions of the new ADN nurse. They were also asked to answer six short essay questions about the changing roles of nursing and nurse education. Among the tasks that the respondents identified as essential or important were communication, application of the nursing process, use of technical skills, collaboration, delegation, and critical thinking. The written responses indicated that the job responsibilities of RNs would increase over the next five years. The majority did not believe, however, that the role of the ADN would become different from that of the BSN.

We found no published studies that were solely about the job tasks of beginning RNs who had earned BSNs. The consensus among the nurse educators we interviewed, from both BSN and ADN programs, was that the tasks that new nurses are asked to perform do not differ according to educational background.

Perhaps the most accurate analysis of what entry-level RNs of all educational backgrounds are asked to do on the job comes from the National Council of State Boards of Nursing (NCSBN), which creates and administers the NCLEX-RN®. Because all graduates of prelicensure programs must pass this exam in order to be licensed to practice nursing in the United States, the test covers a range of entry-level RN job tasks. It is widely seen as a valid measure of basic nurse knowledge and competencies. To

ensure that the test covers the skills that are currently required on the job, the NCSBN conducts ongoing job research and analysis, asking practicing nurses to rate the frequency at which they perform a variety of nursing tasks. The results are compiled every three years and used as a basis for revisions to the exam.

The NCLEX-RN® is a multiple-choice, computer-adaptive exam. The majority of the test focuses on questions of physiological integrity, or the promotion of patient health, indicating that new nurses spend the majority of their time ensuring patient comfort, providing medication and therapy, reducing patient risk, and managing overall patient care (NCSBN 2000b). The second-largest group of questions focuses on nurses' knowledge of human development, disease prevention and detection, and how to provide a safe environment for patients (these areas are covered at about the same degree of frequency). The subjects that the exam covers least are providing nursing care that helps clients cope with illnesses or disabilities and managing care for clients with acute or chronic mental illnesses.

The NCSBN states that "because the practice of nursing requires application of knowledge, skills and abilities, the majority of the questions in the examination are written at the application and/or analysis level of cognitive ability" (2000b, 4). This indicates that the NCSBN expects all entry-level nurses, regardless of their educational background, to use critical thinking skills on the job.

The importance of the job tasks emphasized on the NCLEX-RN® is validated by the ongoing job analysis. The NCSBN's July 1999 survey of RNs who had been certified within the past three to six months indicated that newly licensed nurses tend to work in acute care facilities (82 percent) and spend the majority of their time performing patient assessment and implementing patient care. Entry-level RNs reported doing the following activities most frequently:

- Taking verbal medical orders.
- Initiating treatments that were given by verbal orders.
- Supervising care given by unlicensed nursing assistants.
- Performing mathematical calculations.
- Delegating or assigning care activities to other providers.
- Using computer technology for charting, planning care, or scheduling.

While this survey reveals what job tasks new nurses perform, it does not give complete information about what healthcare facilities expect of new nurses and how those expectations and job tasks have changed. It also does not illustrate the ways in which the tasks of new RNs differ from those of more experienced nurses. Finally, the

literature reviewed here does not offer clear evidence that the changed healthcare environment has greatly influenced new nurses.

Clearly, more research is needed about what new RNs do on a daily basis, whether those tasks have changed, and whether they differ between new and more experienced RNs. Understanding any differences in the job performance of BSN and ADN nurses can help educators decide which prelicensure program provides the best preparation for nurse practice. As it is assumed that schooling and formal learning is the most important form of prelicensure preparation for nurse practice, and that different educational programs undertake different educational practices and approaches, it is often believed that BSN and ADN education nurses have different levels of job performance. The next chapter reviews the literature that is available on this issue.

6 Research on Prelicensure Education and Job Performance

This monograph has explored the skills and knowledge nurses need, the educational requirements of ADN and BSN programs, and the tasks that new nurses are asked to perform. The evidence thus far has not overwhelmingly supported increased education requirement for RNs, but it does not rule out the possibility that higher educational achievement might result in better nursing care. Exploring what is known about the relationship between education and job performance will help clarify whether the call for a BSN-educated nursing workforce would lead to greater competence among RNs or create barriers for those who wish to enter the profession while providing few tangible positive results.

Much of the literature is inconclusive or dated, which makes it of minimal relevance to the current debate. Nonetheless, exploring the few studies that are available does offer some insight into the relationship between prelicensure education and job performance. It also may help researchers and practitioners formulate questions for further research.

Of the relevant studies, most focus on the competencies of graduates of one type of program and do not directly compare how BSN and ADN graduates perform on the job. These studies are of only limited use. As the policy concern relates to the comparative value of the programs—does one approach to prelicensure education do a more adequate job preparing new nurses, or is there merit to both—just knowing how associate degree graduates perform on the job is not enough. Rather, what is needed are studies that explore, for example, whether the level of critical thinking exhibited by ADN graduates is similar to, greater than, or less than that exhibited by BSN or diploma graduates. Only then can one begin to infer the most effective form of education. Without a comparison group, studies are unable to give this information. Thus, this chapter focuses on the few studies that compare outcomes for ADN and BSN nurses.

Within this small sample, the outcomes are mixed. While some studies find that one type of education leads to a higher level of nursing competency than the other, other studies find little difference. To some degree, each study's conclusions are determined by what the researchers are looking for, how outcomes are measured, and what

is being compared. For example, studies that focus on "professional" outcomes are more likely to find that BSN students perform better than ADN graduates do. This is in part a result of the NLN definition of "professional" competencies, which assumes that BSN programs prepare nurses for more managerial and research-oriented positions and focus more on critical thinking than ADN programs do. Using a different definition of professional behavior could change the researchers' conclusions.

Much of the research does not distinguish which skills are integral to entry-level job practice (such as basic patient-care skills) and which are more important at more advanced levels of practice (such as conducting research); instead, these studies combine basic and advanced skills in the same measures. While it is important to know if one educational program is better preparation for entry into management positions, the differential impact of such programs on nurses' ability to provide basic patient care may not be great. The literature suggests that the differences between ADN and BSN programs may not greatly affect nurses' ability to perform basic nursing tasks, and that both programs prepare RNs to function at the entry level in most healthcare settings.

Literature That Synthesizes a Number of Previous Studies

Some of the literature attempts to draw conclusions by combining findings from a number of previously published studies. Johnson (1988) conducted a meta-analysis of 139 quantitative studies of nurse performance, analyzing the effects that associate degree, diploma, and baccalaureate education had on nurses' professional behaviors, technical skills, and role development. For each study, the *effect size*, or outcome differential between the experimental and comparison groups, was calculated. This allowed the researcher to determine the overall gains or losses that comparison group members experienced according to their "treatment." The effect size is a measure of improved outcomes as a result of higher education. The more education a nurse has, the greater effect one would expect to see. Johnson made these calculations for all 139 studies in the analysis, which allowed her to determine an overall measure of educational impact across a wide range of studies and possible outcomes.

Johnson determined that obtaining a BSN did have a positive impact on nurse practice, particularly in regard to professional skills such as communication and problem solving. No difference was found between associate degree and diploma nurses. However, the relationship between education and job performance is not clear; when the studies were disaggregated, or broken apart, for further analysis, some of the apparent benefits of the BSN disappeared. For example, BSN-educated nurses were found to be "more professional." When the broad category of "professional nursing competencies" was broken apart, though, BSN nurses were not found to be more skilled in all

areas: They were more competent in communication and problem solving, but demonstrated no more skill in leadership and autonomy than did ADN or diploma nurses. Compared with that of associate degree nurses, the effect size for the technical competencies of BSN nurses was negative, indicating that they performed less well than ADN nurses did on technical nursing skills that relate directly to patient care.

However, the few studies in the analysis that controlled for years of nursing experience found that the impact of education on job performance was much smaller for nurses with less than one year of experience. This seems to indicate that education may have less of an effect for new nurses than for more experienced RNs. Similarly, differences were much smaller for nurses practicing in hospitals, where entry-level nurses tend to practice. These results indicate that educational background may be more important for nurses practicing at an advanced level than for newer nurses and those practicing in more traditional settings. If this is the case, it seems likely that increased educational standards may be less important for entering nursing practice than for career advancement. In other words, an ADN may sufficiently prepare students to practice as an RN generalist, but a BSN may be more valuable in preparing students for advanced practice and to work in ambulatory settings.

This study has a number of weaknesses that make it minimally useful for informing today's debate:

- Most of the studies included in the meta-analysis were conducted in the 1970s and early 1980s, with the oldest being from 1961. It is unlikely that they accurately reflect today's nursing environment.
- The subjects' ages, socioeconomic status, and years of nursing experience were reported in less than 20 percent of the studies, meaning that the author was unable to control for the effect of these factors. Thus, it is unclear that educational background alone causes the observed differences; it may be that the age or experience of nurses, or a combination of factors, leads to differential job performance.

Despite these limitations, this is the most comprehensive analysis available and therefore it is useful to note the performance differences it found between baccalaureate and associate degree nurses.

Another study (Fitzpatrick, While, and Roberts 1994) offers a more nuanced review of the literature comparing diploma, associate degree, and baccalaureate prepared RNs, and is inconclusive about the relationship between education and subsequent job performance. This review includes studies that used a variety of

methodologies: ratings studies, which ask nurse directors, head nurses, or nurses themselves to rate RN performance; simulation assessments measuring RN skills in an artificial nursing environment; and direct observations of nurse practice. Unlike Johnson's meta-analysis, this review included qualitative studies, which allowed its authors to explore a variety of facets of nursing practice. The variety of information and the many ways in which the data were collected and presented precludes comparisons across studies, however, so the authors could not draw definitive conclusions about the best way to prepare entry-level nurses. They noted only that the evidence relating educational preparation to RN job performance is weak.

Despite these limitations, this review is helpful because it looks at a variety of sources in order to understand the effects of education on nursing competency, and because it underscores the lack of clarity in this area. Studies asking nurse supervisors, head nurses, or other personnel to rate job performance of ADN and BSN nurses were the most inconclusive, with some finding that associate degree nurses are less technically competent than other nurses and others determining that ADN program graduates are the most effective RNs. Studies that looked at direct measures of performance, such as lab simulations and task analyses, also had mixed results, with some suggesting that performance is directly related to educational preparation and others that there is no relationship. The wide range of outcomes indicates that, while there may be some relationship between education and competence, determining what the relationship is or how best to capitalize on it is not possible. Some of the difficulty may come from the experimental nature of most of the studies reviewed. The use of artificial indicators of competency, such as simulations or ratings, rather than observational methods, may have affected the review's findings by measuring skills unrelated to actual job practice.

Literature That Reports on Only One Study

Some of the literature focuses on the results of one specific study, usually concentrating on a small subset of nursing practices. These reports, too, offer mixed conclusions about how nurse education affects practice. One study (Giger and Davidhizar 1990) suggests that there may be a relationship between education and job performance. It used nursing students' written answers to practice-related essay questions as a proxy for nursing skill, rather than observing performance directly. The essay answers were coded for three types of competencies—professional (reflecting NLN baccalaureate competencies), technical (reflecting NLN associate degree competencies), and all-nurse (expected of all nurses). Each category was broken down into four broad areas—the nursing process, diagnosis, concept analysis, and theoretical concepts.

Analyses of the written questionnaires revealed a difference between BSN and ADN students' conceptual and theoretical approaches to nursing, as well as a relationship between educational background and students' leadership skills and the use of the nursing process. BSN nurses outscored ADN nurses on professional skills. Likewise, ADN nurses were found to be most concerned with technical skills and content-driven nursing tasks, including the direct provision of nursing care (as opposed to research or teaching). BSN nurses were found to be more knowledgeable in their use and implementation of the nursing process and their ability to evaluate the effects of nursing interventions.

Although differences were found between the two groups of nurses, the study does not provide a clear indication that these differences are reflected in entry-level nurse practice. First, subjects were nursing students who had not yet entered the field. Second, essays were used as proxy for practice; it is possible that the liberal arts education BSN nurses receive allowed them to articulate their cognitive processes better than the ADNs did, making them seem more proficient in these areas. Third, the authors offer no evidence that theoretical models of nursing actually lead to different forms of practice or different levels of patient care when applied.

Another study (Sanford, Genrich, and Nowotny 1992) looked at the clinical judgment of newly hired nurses in a large hospital. Clinical judgment was defined as the ability to think critically when identifying patient problems, specifying and prioritizing nursing interventions, offering a rationale for each intervention, and identifying ways to prevent patient risk. Given the changing nature of the nursing workplace, in which nurses are expected to perform more tasks independently, are more likely to work outside of a hospital, and are more likely to use high-tech equipment, critical-thinking skills and the ability to make quick decisions are increasingly important. This study hypothesized that BSN nurses would perform better on clinical judgment skills because the NLN specifies th t clinical judgment be taught in baccalaureate degree programs but does not include it in their associate degree or diploma program competencies.

The study sample was 116 nurses hired between January 1987 and August 1988 at a large medical complex. All but four had completed their nursing program in the year before they were hired and only 12 percent had taken the licensure exam at the time of the study, indicating that the sample was largely composed of new nurses. Subjects viewed short videos and responded to practice-oriented questions by writing short answers in four areas: identifying the patient problem, specifying appropriate nursing interventions, offering a rationale for the interventions, and identifying ways to reduce patient risk. A nurse educator judged each answer based on a standard answer key. Subjects who earned an overall score of 80 percent correct or higher were deemed to be competent in their clinical judgment.

The authors found no difference in competence between baccalaureate and non–baccalaureate-trained nurses. Regardless of educational background, only 20 percent of the sample scored at the acceptable level, indicating that all RN preparation programs lack training in critical thinking. The authors speculated that the overall low level of competence results from the difference between practicing skills and performing them in the workplace. The new nurses in this study were less able to draw conclusions on the basis of subtle patient cues than more experienced nurses would have been because they had had less opportunity to practice doing so.

The authors posited that proficiency in making clinical judgment develops through practice and concluded that all nurse education programs must emphasize the development of clinical judgment. This study suggests that whatever the degree level, the nurse education programs that emphasize clinical experience the most might be the most successful at preparing new nurses.

This study has three potential shortcomings:

- It is not clear that evidence of clinical judgment on written assessments translates into improved nursing practice.
- The subjects may not have been able to explain their cognitive processes in writing, thus leading to an underestimation of their abilities.
- The authors note that videotapes used in the study did not truly represent the workplace. This lack of realism limited the subjects' ability to ask questions of the patients and to use their senses of touch and smell to draw conclusions or make diagnoses.

A third study (Goode et al. 2001) explored chief nursing officers' (CNOs) belief about differential competency based on educational background. It found that nearly three-quarters of CNOs believed that there was a difference in practice between ADN/diploma graduates and BSN graduates. Most of these believed that BSN nurses had better critical thinking skills and were less task-oriented than other nurses. Despite this belief, most respondents did not have a goal for the percentage of their nursing staff who should hold a BSN, nor did they differentiate by degree in their orientation programs. Slightly less than half provided higher salaries for BSN-educated nurses.

Because the study relied on CNOs' perceptions of competence, rather than nurses' actual job performance, the BSN preference found by the researchers may have been biased by subjects' pre-existing beliefs regarding the value of a BSN education. Thus, it is not clear that the findings indicate any real difference in job performance among graduates of various degree programs. Additionally, the sample included in this study was small, was limited to CNOs in university hospitals, and had a low response rate. Still, it does indicate that practicing nurses see value in the BSN.

Table 6.1

Summary of Findings from Studies Comparing Job Performance of BSN and ADN Nurses

Study	Description and Main Findings
Johnson (1988)	• Meta-analysis of 139 quantitative studies • BSN nurses had better performance on some variables, including communication and problem solving; no difference on other variables, such as leadership and autonomy • Smaller effect sizes for nurses in their first year of practice and for nurses practicing in hospitals
Fitzpatrick, While, and Roberts (1994)	• Review of literature comparing diploma, ADN, and BSN job performance • Inconclusive; some indication that educational background influences job performance, but in what ways and how were not clear
Giger and Davidhizar (1990)	• BSN-educated nurses indicated higher proficiency in leadership, approaches to nursing, ability to make diagnoses, and ability to evaluate nursing interventions • ADNs more focused on providing patient care • BSNs found to be more process-oriented while ADNs found to be more content-driven
Sanford, Genrich, and Nowotny (1992)	• No difference in clinical judgment between BSN and ADN prepared nurses • Very few nurses, of any educational background, demonstrated an acceptable level of proficiency
Goode et al. (2001)	• Survey of university hospital chief nursing officers • CNOs believed that BSN graduates exhibited higher levels of critical thinking and were less task-oriented than ADNs and diploma nurses • Few CNOs had staffing goals related to education, differentiated salaries by degree, or offered different orientation programs for nurses of different educational backgrounds
Hudis et al. (1990)	• Qualitative study of nurse managers and human resource professionals • Mixed perceptions of relative degree preparedness of BSN and ADN nurses • Equivalence between ADNs and BSNs at entry to practice

One of the few studies that addresses actual workplace performance is an analysis of focus group interviews and surveys of nurse managers, healthcare leaders, human resource professionals, and nurse educators in California (Hudis et al. 1992). These front-line professionals offer insight into the actual job activities and competencies of nurses. The study reveals a wide range of opinions about education and job performance.

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Some interviewees felt that BSNs lacked clinical skills, while others felt that ADN education was not adequate preparation for practice. Some believed that BSN students possessed a higher degree of leadership and decision-making skills than ADN students did. The authors of the study concluded that

> *the majority of respondents...felt that nurses with associate and baccalaureate degrees were about equivalent in their entry-level skills and abilities. However, most nursing administrators also agreed that BSNs later outperformed ADNs when nurses were called upon to exercise leadership and independent judgment. Yet, there was an important qualifier to this last statement. Several respondents indicated that it was actually very difficult to compare BSNs and ADNs later in their careers because so many ADNs who aspire to leadership, supervisory or specialty positions return to school for their baccalaureate degrees. (69)*

Implications of the Studies

The studies reviewed do not clarify whether educational background has an effect on nursing competency, at least in simulated situations. Although BSN-educated nurses performed better than others in some, but not all, areas, the overall differences were small. Many of the differences were in "professional" nursing tasks—including the ability to perform research and administrative duties—that, while important, may not be critical for new nurses.

Moreover, the studies reviewed have a number of shortcomings. First, many of them date from the late 1980s and early 1990s. If, as was posited in the previous chapter, the nursing field is changing rapidly, the literature on performance should reflect the current demands on nurses and the current curricula and pedagogy of RN prelicensure programs. Dated literature is unlikely to do this. Second, these studies offer little information about which program elements translate best into increased competence in the workplace, because they rarely explore practices within ADN and BSN programs that may influence student outcomes. Finally, the theoretical and simulated nature of most of the studies means that they rarely measure RN job performance directly. Inferences must be drawn from subjects' performance on written assessments or videotaped experiments, rather than from actual activities in the workplace.

Our own interviews with nurse educators also revealed mixed opinions about whether the performance of ADN and BSN graduates differs. While most of those we interviewed agreed that all graduates were competent for basic nursing practice, some felt that BSNs were better able to perform in leadership positions. For example, the dean of nursing at a southeastern community college explained that both ADNs and BSNs are prepared for the workplace and become competent RNs, particularly in acute care set-

tings, but she believes that RNs in certain types of nursing jobs (such as management positions) could benefit from higher degrees. A professor at a northeastern university concurred, stating that

> *At the entry-level, ADNs may actually have an advantage, in that their extra clinical practice helps make them proficient nurses, but in the long-term, the BSN is better off....Institutions are looking for the leadership, ability to function in management roles, the critical thinking, and the well-rounded background that comes from the BSN when promoting nurses.*

The lack of evidence that one form of education is better preparation for entry-level nursing means that the case for changed entry requirements is not wholly compelling. It has not been shown that a baccalaureate degree will lead to a higher level of both technical and professional skill. Still, the possibility that one form of nurse education provides better preparation than another cannot be ruled out. If one type of program is more effective, that type should be expanded.

In sum, little is known about how changes in the healthcare industry are affecting the job tasks of entry-level nurses, or about the impact of RN prelicensure education on these tasks. Clearly, further research is essential, particularly given the looming nursing crisis, labor market changes, and debates regarding the proper educational requirements for nurse licensure.

What can policymakers and nurse educators who are seeking to create new educational systems and requirements learn now from the research? First, they can take comfort in the evidence that entry-level nurses of all educational backgrounds are successfully employed in a variety of healthcare settings and that most researchers and educators believe that nurse education programs prepare students for basic practice. Second, they can draw inferences from the literature about which educational practices lead to improved entry-level nurse practice and act on those inferences (for example, creating more clinical placements in light of findings that indicate that clinical experience contributes to nurse competency). Third, they can be mindful of demographic patterns when creating recruitment policies in order to ensure that a diverse array of nursing students are able to enter the profession. In the next chapter, we explore the implications of the research findings for nurse education and nursing policy. Drawing on our interviews with nurses and nurse educators, as well as the research, we offer suggestions for policymakers and educators in regard to both the debate over entry-level nursing education requirements and curricular and pedagogical changes that can enhance nurse education at all levels.

7 Lessons and Recommendations

The call for increased educational standards is not unique to nursing. Many states now require teachers to earn master's degrees; many information technology jobs require certifications and credentials beyond secondary education; and many firms require administrative assistants to have some college education. Such requirements are often linked to changing occupational demands and predicated on the assumption that more education leads to increased professional skill. The same assumption underlies recent national efforts to more closely link education and work in many fields through the creation of industry-validated skill standards that reflect current occupational demands.

Those in favor of requiring the baccalaureate degree for entry into nurse practice have a similar rationale. They contend that the BSN requirement will ensure that nurses are able to meet the changing needs of the occupation and that nursing will be considered a professional occupation on par with teaching, accounting, and law. Both of these goals are laudable and worthy of pursuit. However, there is no compelling evidence that making the BSN the minimum entry-level degree for the profession will ensure that they are achieved.

The research we reviewed does not indicate a clear relationship between the nursing degree earned and the level of nursing skill, and differences between ADN and BSN programs in terms of coursework, pedagogy, and clinical experience are not obvious. ADN students usually take longer than two years to complete their degree, often completing extensive prerequisite requirements in the sciences and liberal arts. They also may be exposed to more clinical practice than BSN students are, thereby easing their transition into practice. NCLEX-RN® pass rates for graduates of the two types of programs are virtually identical. Employers appear to value graduates from both types of programs and distinguish little between them in practice. Published studies that compare the competency and job performance of BSN and ADN graduates are inconclusive about whether either type of education leads to better nursing skills.

Earning a baccalaureate degree could enhance nursing's professional status. Requiring that all RNs earn the BSN would likely increase nurses' prestige in the public eye, allow them to effectively argue for increased salaries, and possibly attract new

individuals to the profession. This may be a worthy effort, particularly given the current difficulty of retaining RNs in the profession and the insufficient numbers of young people who see nursing as a desirable career choice.

However, a BSN requirement may have adverse effects. Some individuals may lose access to nurse education if they are required to attend four-year programs, which would limit the number of new nurses. The higher cost of the baccalaureate, the greater length of time needed to complete it, and four-year institutions' more limited geographic accessibility could prohibit attendance for many students, particularly those from disadvantaged backgrounds and those who are entering nursing as a second career. Given the severity of the nursing shortage, limiting access to nursing education in order to achieve professional status may be shortsighted.

Still, the call for the baccalaureate standard is strong, and many prominent groups are working to limit professional opportunities for ADN nurses. If these groups' proposals are enacted, both associate degree and baccalaureate degree programs would be affected. ADN programs might not culminate in the RN, and BSN programs could be left to educate the entire population of new nurses, requiring them to nearly triple their enrollment just to keep pace with current RN licensure rates.

The logistical questions and implementation issues associated with the proposed changes are daunting and best discussed elsewhere. Our concern is the creation of an educational policy that reflects the current demands placed on entry-level nurses and provides entry into the profession for as many students of as many backgrounds as possible, all while maintaining the professional and intellectual integrity of the nursing field. The research we reviewed does not offer compelling support for eliminating the associate degree in nursing, but it does indicate that some changes within nurse education may be warranted.

Lessons

For those who are involved with nurse education—policymakers, nurses, educators, and administrators—a number of lessons can be taken from the review of the literature and interviews with educators discussed in this monograph.

Move Carefully and Work Together

The first lesson is to think carefully before implementing drastic change. More research is needed before the relationship between educational background and job performance in the new healthcare environment can be ascertained. The need to maintain broad access to nursing indicates that a one-size-fits-all approach to prelicensure education may not be advised—a variety of educational programs may all prepare new nurses well, though they may look different on the surface. Eliminating or dramatically

modifying one or more educational pathways may have unintended consequences for nurse preparation and the nurse population in the future.

It is also important to note that in many ways, the nurse education debate is taking place outside of nurse programs and healthcare facilities. It is a theoretical debate, and currently affects local practice to a much lesser degree than advocacy groups would admit. Our interviews with nurse educators at the community college and four-year college levels indicate that those involved with the day-to-day preparation of nurses are less concerned about degree titles than with preparing highly skilled professionals and stemming the nursing shortage. While most agree that more education is always beneficial to RNs, they also sense that preparing nurses to practice competently is most crucial, and that current ADN programs do so. One professor at a four-year institution in the northeast noted, "The current debate is ironic. The ADN was created to address a nursing shortage—so why would we get rid of it in the middle of another shortage?"

As many four-year programs see value in the two-year programs, and vice versa, it may be constructive for both two-year and four-year degree-granting institutions to view the debate as motivation to create prelicensure programs that reflect occupational requirements, rather than as a threat to the viability of their degree program. Recognizing that both forms of prelicensure education have prepared new RNs for many years, and that both have strengths that can be applied to other programs, will allow nurse educators to learn from one another and modify all nursing education programs in ways that reflect the best practices of others.

If nurse educators view one another as allies rather than as adversaries, they may be able to work together to create a system that is adaptable to local needs, offers students a range of educational options, and enhances professional credibility. Quite a few of those we interviewed noted that the truly harmful effect of the ADN versus BSN debate is the fragmentation of the nursing profession. Noted one professor at a four-year program, "nurses just can't get it together. We're always scattered...and we just seem stupid because we can't even figure out what educational background is needed to become a nurse!" Presenting a united front may enhance the professional credibility of nursing just as much as increasing educational requirements would.

Conduct Further Research and Use It

The literature outlining what entry-level nurses are expected to do on the job is sparse, as are direct comparisons of the job performance of ADN- and BSN-prepared nurses. Conducting research in these areas is a necessary next step in informing the debate about nurse education standards. Nurse educators, particularly those in research institutions and those who hold doctoral degrees, should focus their work on these issues in order to expand the body of knowledge that informs the debate. Healthcare institutions

and medical foundations should provide funding to ensure the timely completion of projects that focus on the relationships between occupational demands, educational programs, and nurse competency.

Conducting research is not sufficient, however. Research findings should be incorporated into both policy and educational programs. Policymakers should commit themselves to using research findings when crafting proposals, and to building those proposals upon the documented needs of the nursing profession. It may be that one form of prelicensure education leads to more competent nurses; policymakers would be wise to recognize this and encourage a shift toward that form. Researchers may discover that the needs of the nursing profession vary markedly according to the local labor market. Policymakers should use such findings to create location-specific policies and refrain from calling for a one-size-fits-all model of nurse education.

Use of new research on nurse education and practice must not be limited to policymakers. Nurse educators and college administrators must work to ensure that their programs reflect the findings. Building nurse education programs, at whatever level, that draw upon research and link students' educational experiences to current nurse practice is likely to create favor for those programs. In other words, good programs that produce high-quality graduates will remain desirable—and a movement to eliminate or devalue them simply on the basis of their degree-granting status is unlikely to succeed. Programs whose curricula and pedagogical approaches are based on research can convincingly argue that they prepare students for the jobs that they will enter upon graduation. For example, if research indicates that new nurses are expected to demonstrate advanced clinical skills immediately upon being hired, programs that emphasize clinical practice are likely to produce valuable and competent graduates. Likewise, if healthcare facilities expect a high degree of leadership skill from new nurses, programs focusing on developing that skill will be valued no matter what degree they grant.

Basing curricula and educational practices on research findings is feasible. Many of the programs we looked at are beginning to base their curricula and pedagogy on informal research conducted in their local areas. For example, a northeastern school that offers the BSN is working with local employers to determine what is expected of entry-level nurses, and will rearrange its curricula accordingly. A community college in a different state is doing similar work—representatives of local hospitals serve on the school's curriculum committee and help revise the program to address changes in the field.

Expanding this sort of work and incorporating national data into the curriculum revision process will strengthen nursing education programs of all degree types. More intensive research on "best practices" throughout the country will help schools learn from one another and ensure that their graduates are prepared to practice throughout

the country. The ability of programs of all educational types to produce competent, valuable graduates will encourage state boards of nursing to continue to recognize a variety of educational pathways. The comments of one of the nurse educators we interviewed, a dean of nursing and health sciences at a southeastern community college, exemplify this. She stated that the BSN versus ADN debate does not concern her "as much as it might, because in my part of the world, two-years [ADN-graduates] are respected, are seen as the backbones of medicine. Employers see my graduates as competent, valuable nurses."

Create Clearer Career Ladders

Nurse educators and policymakers should recognize that some modification to educational requirements for nurses might be beneficial to the profession. The current system is fragmented and confusing for patients and potential students, and the benefits of the multiple degree paths are not clear to those outside of nursing. Moreover, requiring nurses to have more education can only serve to enhance the profession's prestige, which might in turn encourage more people to become nurses.

The changes need not be as drastic as eliminating or devaluing the ADN as a route to professional nursing. Many nurse educators believe that offering multiple points of entry provides access and quality education to a wider range of students, thereby increasing the number of RNs in the workforce and the diversity of the nurse population. These educators also feel, however, that a baccalaureate degree is desirable and that all nurses should continue their professional education for the duration of their careers.

A middle ground is needed, something between the elimination of the ADN and the current fragmentation of educational pathways. While we are reluctant to offer specific policy recommendations here, particularly in light of the need for further research, we suggest the creation of a discrete career ladder within nursing as the most promising way to achieve such a middle ground. This approach could increase the educational attainment of the RN population without sacrificing wide access to nurse education.

Career ladders are institutionalized structures that provide for upward mobility by rewarding increased education and skill. They can exist within organizations, such as in the form of an internal promotion system, or across organizations within the same industry (Bernhardt and Bailey 1998). Across-organization ladders allow individuals who have gained education or special skills with one employer to advance in their careers even if they move to another. In such a system, certifications and specialized training are recognized by many companies in the same industry, rather than only by the company a person worked at when he or she received that training.

Under such a system, nurses with higher-level degrees or extensive clinical experience and skills would be offered entry into advanced positions within nursing, such as

management, or employment in specialized fields, such as intensive care. Career ladders could allow nurses educated in a variety of programs a way to maintain their status as RNs, but allow for differential pay and responsibility based on educational attainment and work experience gained after initial licensure. One important element of the career ladder is that promotion and career mobility are not determined solely on educational background, but through an established set of criteria that take skill and ability to perform the job into account. In this way, career ladders contrast with other proposals for the reform of the nursing profession, such as that offered by the AACN-AONE Task Force on Differentiated Competencies (AACN 1995).

The Task Force attempted to define "scopes of practice" specific to the presumed skills and competencies of RNs holding different educational degrees. Movement between each scope of practice would be predicated on the degree held by the nurse, rather than her or his demonstrated competence. Noted the report, "This model of differentiation...does not imply a lateral move from one role to another as an individual becomes 'expert' or more experienced in practice and the delivery of nursing care" (AACN, AONE, and N-OADN 1995, 12). The career ladder approach that we refer to is less limiting. While it takes educational attainment into account, it also provides for highly skilled RNs to advance within the profession commensurate with their abilities, regardless of degree. Thus, career ladders provide mobility for all nurses while valuing further education and encouraging the attainment of advanced degrees.

Because career ladders do value life-long learning, they frequently provide financial incentives for individuals who continue their education. Offering concrete rewards to further education would likely encourage more RNs to attain the BSN because there would be specific financial or career mobility benefits to doing so. Allowing RNs to enter the profession with the ADN, however, will ensure that those who cannot afford the baccalaureate degree initially will still be able to become RNs. People outside of nursing will likely view the field more positively when they are able to see clear advancement paths in it, just as they can see advancement paths in business or law.

To create RN career ladders, those in the healthcare and nursing fields must address a number of issues.

Differentiate Between Novice and Advanced Practice

Preparing nurses for basic practice in acute care facilities may be different from preparing nurses for management positions or practice in outpatient clinics. Recognizing that both the ADN and the BSN prepare novice nurses well does not preclude the need for advanced training in specialized areas.

The fact that employers willingly hire ADN graduates and appear not to differentiate among new nurses in practice indicates that both forms of education prepare nurses

to perform their jobs well. They both exhibit clinical skills and make professional judgments that affect patient care. Nurse educators also recognize this. However, nearly all nurse educators also agree that the level of education offered by the baccalaureate degree program, while less directly related to basic nurse practice, is valuable in higher positions within healthcare. They believe that the BSN gives students the skills they need to take on nursing leadership roles and become managers. Some of the interviewees believe that ADNs are promoted as frequently as BSNs are, but others told us that healthcare institutions give weight to BSNs when promoting nurses to supervisory positions. Obviously, the attainment of a master's degree, advanced certification, or a doctoral degree in nursing would provide additional mobility up the career ladder, though this monograph does not focus on advance practice nursing.

Differentiating among nurses on the basis of their educational attainment and experience when hiring for leadership and management positions rather than at the entry-level seems a promising way to allow for career growth and encourage BSN attainment. A person need not earn an MBA to enter or succeed in the business world, but is more likely to be promoted upon earning that degree. If the same principle were applied to nursing, a BSN would lead to advancement in the field but would not be required for entry into it; thus, ADNs could enter the field, gain experience, then continue their education if they desired career advancement.

Ease Movement between the ADN and the BSN

Career ladders are predicated on the assumption that professionals who enter the workforce with one degree will be able to fulfill the requirements for career advancement while working. If obtaining the next degree is too time-consuming or expensive, or if its perceived value is not high enough, individuals will not work toward the next degree, thereby getting locked into lower-level positions. In nursing, this would mean that nurses who become RNs through earning an associate degree must be able to go on to complete a baccalaureate with relative ease, as would baccalaureate-educated nurses wishing to obtain master's and doctoral degrees.

Unfortunately, many of the links between the ADN and BSN programs are not well implemented, leading to difficulty for many nurses who hold an ADN to earn a BSN. One community college administrator described the transfer process between the two types of programs as "arduous." Most four-year institutions have agreements with local community colleges that allow students to transfer their associate degree credits, and a number of states have begun concerted efforts to promote such arrangement. However, articulation agreements vary from institution to institution. For example, one of the BSN programs we looked at allows ADN transfer students to waive most of the nursing requirements under the assumption that practicing RNs already possess nursing

skills, but requires additional liberal arts courses. Another four-year school does the opposite, waiving most of the general education requirements for ADNs and requiring them to take primarily nursing theory courses.

ADN graduates who transfer to BSN programs are often unable to earn credit for all of their prior course work, so they must repeat nursing or general education classes that they took at the community college level. In addition, they often must either take a standardized test (at their own expense) to receive credit for their clinical skills, or retake the entire clinical curriculum. This makes earning a BSN a time-consuming and expensive proposition for many. As a result, few ADNs earn their BSN.

Universities can promote BSN attainment by streamlining the transfer process. Expanding articulation agreements with community colleges and offering alternative ways for registered nurses to earn university credit will encourage more RNs to obtain a baccalaureate degree. Healthcare facilities should play a role by encouraging staff members to obtain the BSN and offering tuition subsidies for RNs who enroll in a baccalaureate program. While many facilities do offer some tuition aid, a number of those we interviewed said that this benefit is disappearing as hospitals become more concerned about their profit margins.

Conclusion

Our review of the research indicates that completely overhauling the nurse education system and eliminating one or more of the current paths to the RN license is unwarranted. There is not enough evidence in favor of the baccalaureate degree to insist upon its use as the minimum entry standard for the profession. However, the call for increased education for nurses is growing, and it has some merit. Increasing the professional status of nursing could draw more individuals into the field, an important outcome given the current nursing shortage in the United States. Nurse educators and policymakers would be wise to recognize the benefits of further education and find ways, such as the creation of career paths, to encourage nurses to earn the baccalaureate degree.

We have not attempted to solve the controversy about the educational requirements for becoming an RN. Rather, we have outlined the available research that is pertinent to the debate with the hope that policymakers and educators will use it as a starting point for crafting solutions that meet the needs of current and future nurses and their patients. Though this research is more meager than one would like, it can serve as a starting point for future policy debates and research projects. Carefully considering the information that is available can help avert rash decisions that could have unseen and potentially negative consequences.

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